



Ahmed Razzaq Hasan Al-Manea

أحمد رزاق حسن المانع

Associate Professor

PROFILE

Greetings,

I'm Dr. Ahmed Al-Manea, and I am enthusiastic about collaborating with fellow researchers in the realm of Mechanical Engineering and Fluid Flow. My current focus revolves around the exploration of Renewable energies & supersonic jet expansions, employing state-of-the-art techniques.

Proficient in a range of disciplines, my expertise spans Finite Element Analysis, Fluid Mechanics, Design Engineering, Computational Fluid Dynamics, Numerical Simulation, Numerical Modeling, CFD Simulation, Engineering Thermodynamics, FLUENT, Renewable Energy, Experimental Fluid Mechanics, Computational Simulation, Computational Analysis, Laser Applications, and Condensation.

I am eager to contribute my knowledge and skills to the collective pursuit of advancing these fields and fostering innovative solutions.

ACADEMIC TITLES

2022-10-16 Associate Professor

ADMINISTRATIVE POSITIONS

2021-06-05 - 2024-02-05 Dean Assistant for Scientific affairs

2020-06-05 - 2021-05-05 Scientific Affair Department

PUBLICATIONS (81)

- Simulation investigation of the oscillatory motion of two elliptic obstacles located within a quarter-circle cavity filled with Cu-Al₂O₃/water hybrid nanofluid**
Numerical Heat Transfer, Part A: Applications 86 (5), 1328-1352, 2025 | 2025 | Cited: 40
- Investigation of natural convection and entropy generation of non-Newtonian flow in molten polymer-filled odd-shaped cavities using finite difference lattice Boltzmann method**
Numerical Heat Transfer, Part B: Fundamentals 86 (9), 2830-2855, 2025 | 2025 | Cited: 28
- Enhancing the performance of photovoltaic solar cells using a hybrid cooling technique of thermoelectric generator and heat sink**
Journal of Solar Energy Engineering 147 (2), 021011, 2025 | 2025 | Cited: 31
- Massive energy reduction and storage capacity relative to PCM physical size by integrating deep RL clustering and multi-stage strategies into smart buildings to grid reliability**
Journal of Energy Storage 109, 115058, 2025 | 2025 | Cited: 27
- A review of axial and radial ejectors: Geometric design, computational analysis, performance, and machine learning approaches**
Applied Thermal Engineering, 125694, 2025 | 2025 | Cited: 19
- Advances in heat transfer science: Enhanced techniques for modern industrial applications**
International Journal of Thermofluids, 101145, 2025 | 2025 | Cited: 3

CONTACT

Phone: 07824333909

Email: dr.ahmed.almanea@atu.edu.iq

dr.ahmed.almanea@atu.edu.iq

EDUCATION

دكتوراه (24-08-2019)

Renewable Energy

University Of Southern Queensland

RESEARCH METRICS

h-index (Scopus) 16

h-index (GS) 17

Citations (Scopus) 712

Citations (GS) 860

Documents (Scopus) 40

Documents (GS) 56



7. **Thermal performance evaluation of U-shaped obstacles with rectangle perforation in solar air heater**
Case Studies in Thermal Engineering, 107127, 2025 | 2025 | Cited: 3
8. **Review of the effectiveness of heat pipe heat exchangers for waste heat recovery in HVAC systems**
Engineering Research Express 7 (3), 032504, 2025 | 2025
9. **Preface: 3rd International Conference on Engineering and Science to Achieve the Sustainable Development Goals**
AIP Conference Proceedings 3318 (1), 010001, 2025 | 2025
10. **Efficiency improvement of solar cell module in oval jet impingement at low Reynolds number**
AIP Conference Proceedings 3318 (1), 040005, 2025 | 2025
11. **Sponsors: 3rd International Conference on Engineering and Science to Achieve the Sustainable Development Goals**
AIP Conference Proceedings 3318 (1), 010002, 2025 | 2025
12. **Performance enhancement of a smooth duct solar air heater incorporating artificial roughness-rectangular ribs with various cutoff corners: a numerical approach**
Engineering Research Express 7 (2), 025567, 2025 | 2025
13. **Aspiration Effect on the Convection of a Rotating Hot Rod Covered by an Eccentric Porous Annular Layer**
Heat Transfer, 2025 | 2025 | Cited: 1
14. **Enhancing solar still productivity and efficiency using external condensers and a copper pipe solar collector**
Thermal Science and Engineering Progress, 103652, 2025 | 2025 | Cited: 13
15. **Hybrid active slab with outer PCM Panels—Geothermal well to reduce the heat gain of a building roof**
International Journal of Thermofluids 25, 100993, 2025 | 2025 | Cited: 10
16. **Advances in heat transfer science: Enhanced techniques for modern industrial applications**
International Journal of Thermofluids 26, 101145, 2025 | 2025 | Cited: 3
17. **Aspiration Effect on the Convection of a Rotating Hot Rod Covered by an Eccentric Porous Annular Layer**
Heat Transfer 54 (7), 4407-4427, 2025 | 2025 | Cited: 1
18. **Corrigendum to “Investigation of natural convection and entropy generation in a porous titled Z-staggered cavity saturated by TiO₂-water nanofluid” [International Journal of ...]**
International Journal of Thermofluids 24, 100789, 2024 | 2024
19. **Compression behavior of FeNiCrCoCu and FeNiCrCoMn high entropy alloys under varying temperatures: A molecular dynamics analysis**
AIP Conference Proceedings 3051 (1), 070002, 2024 | 2024
20. **An overview of hydrogen production techniques: Challenges and limiting factors in achieving wide-scale productivity**
AIP Conference Proceedings 3051 (1), 050003, 2024 | 2024 | Cited: 11
21. **Enhancing photovoltaic thermal (PVT) performance with hybrid solar collector using phase change material, porous media, and nanofluid**
Solar Energy 283, 112983, 2024 | 2024 | Cited: 71
22. **Applied AMT machine learning and multi-objective optimization for enhanced performance and reduced environmental impact of sunflower oil biodiesel in compression ignition engine**
International Journal of Thermofluids 24, 100838, 2024 | 2024 | Cited: 19
23. **Preface: 2nd International Conference on Engineering, and Science to Achieve the Sustainable Development Goals**
AIP Conference Proceedings 3092 (1), 010001, 2024 | 2024
24. **Investigation of natural convection and entropy generation of non-Newtonian flow in molten polymer-filled odd-shaped cavities using finite difference lattice Boltzmann method**
Numerical Heat Transfer, Part B: Fundamentals, 1-26, 2024 | 2024 | Cited: 71

25. **Compression behavior of FeNiCrCoCu and FeNiCrCoMn high entropy alloys under varying temperatures: A molecular dynamics analysis**
AIP Conference Proceedings 3051 (1), 2024 | 2024
26. **Preface: 3rd International Conference on Engineering and Science**
AIP Conference Proceedings 3051 (1), 010001, 2024 | 2024
27. **An overview of hydrogen production techniques: Challenges and limiting factors in achieving wide-scale productivity**
AIP Conference Proceedings 3051 (1), 2024 | 2024 | Cited: 1
28. **Enhanced conjugate natural convection in a corrugated porous enclosure with Ag-MgO hybrid nanofluid**
International Journal of Thermofluids 21, 100574, 2024 | 2024 | Cited: 62
29. **Maximizing Efficiency in Solar Ammonia-Water Absorption Refrigeration Cycles: Exergy Analysis, Concentration Impact, and Advanced Optimization with GBRT Machine Learning and ...**
International Journal of Refrigeration, 2024 | 2024 | Cited: 1
30. **Maximizing efficiency in solar ammonia–water absorption refrigeration cycles: Exergy analysis, concentration impact, and advanced optimization with GBRT machine learning and ...**
International Journal of Refrigeration 161, 31-50, 2024 | 2024 | Cited: 26
31. **Convective heat transfer analysis in turbulent nanofluid flow through a rectangular channel with staggered obstacles: A numerical simulation**
International Journal of Thermofluids 23, 100753, 2024 | 2024 | Cited: 36
32. **Applied AMT Machine Learning and Multi-Objective Optimization for Enhanced Performance and Reduced Environmental Impact of Sunflower Oil Biodiesel in Compression Ignition Engine**
International Journal of Thermofluids, 100838, 2024 | 2024
33. **Corrigendum to “Investigation of natural convection and entropy generation in a porous titled Z-staggered cavity saturated by TiO₂-water nanofluid”[International Journal of ...]**
International Journal of Thermofluids, 100789, 2024 | 2024
34. **Integration of Thermal Energy Storage Materials in Heat Pipe Evacuated Tube Solar Collector Systems for Enhanced Solar Thermal Performance**
Computational Thermal Sciences: An International Journal, 2024 | 2024 | Cited: 17
35. **Comparative assessment of thermal oils and water as working fluids in parabolic trough collectors for enhanced solar power generation**
Engineering Research Express 6 (3), 035514, 2024 | 2024 | Cited: 21
36. **Preface: 1st International Conference on Achieving the Sustainable Development Goals**
AIP Publishing LLC AIP Publishing 2776 (1), 010001, 2023 | 2023
37. **Simulation investigation of the oscillatory motion of two elliptic obstacles located within a quarter-circle cavity filled with Cu-Al₂O₃/water hybrid nanofluid**
Numerical Heat Transfer, Part A: Applications, 1-25, 2023 | 2023 | Cited: 24
38. **The application of a single slope solar still in a refinery wastewater treatment: An experimental study**
AIP Conference Proceedings 2776 (1), 2023 | 2023 | Cited: 4
39. **Investigation of natural convection and entropy generation in a porous titled Z-staggered cavity saturated by TiO₂-water nanofluid**
International Journal of Thermofluids 19, 100395, 2023 | 2023 | Cited: 83
40. **Feasibility Study of Small-Diameter Pico-Hydro Breastshot Waterwheel by Computational Method**
CFD Letters 15 (11), 169-180, 2023 | 2023
41. **Design of DC solar water pump for farmers in the Kurdistan region of Iraq**
AIP Conference Proceedings 2787 (1), 2023 | 2023 | Cited: 1
42. **Preface: 1st International Conference on Achieving the Sustainable Development Goals**
AIP Conference Proceedings 2776 (1), 010001, 2023 | 2023
43. **Optimal water addition in emulsion diesel fuel using machine learning and sea-horse optimizer to minimize exhaust pollutants from diesel engine**
Atmosphere 14 (3), 449, 2023 | 2023 | Cited: 66

44. **Investigation of Natural Convection and Entropy Generation in a Porous Titled Z-Staggered Cavity Saturated by TiO₂-Water Nanofluid**
International Journal of Thermofluids, 100395, 2023 | 2023 | Cited: 9
45. **Energy and exergy analysis of a subfreezing evaporator environment ammonia-water absorption refrigeration cycle: Machine learning and parametric optimization**
International Journal of Refrigeration 154, 182-204, 2023 | 2023 | Cited: 45
46. **Acknowledgment to the Reviewers of Energies in 2022**
2023
47. **Design of DC solar water pump for farmers in the Kurdistan region of Iraq**
2ND INTERNATIONAL CONFERENCE ON ENGINEERING AND ADVANCED TECHNOLOGY:(ICEAT ...), 2023 | 2023 | Cited: 2
48. **The application of a single slope solar still in a refinery wastewater treatment: An experimental study**
AIP Publishing LLC AIP Publishing 2776 (1), 050024, 2023 | 2023 | Cited: 6
49. **Experimental and numerical study to develop TRNSYS model for an active flat plate solar collector with an internally serpentine tube receiver**
International Journal of Thermofluids 15, 100189, 2022 | 2022 | Cited: 68
50. **Supersonic Steam Ejectors: Comparison of Dry and Wet-steam CFD Simulation Models**
Journal of Engineering Science and Technology 17 (2), 1200-1212, 2022 | 2022 | Cited: 13
51. **Measurement of turbulent supersonic steam jet flow characteristics using TDLAS**
Flow Measurement and Instrumentation 87, 102212, 2022 | 2022 | Cited: 10
52. **Numerical Investigation on the Effect of Profile and Blade Numbers in a Savonius Vertical Axis Wind Turbine**
CFD Letters 14 (9), 75-88, 2022 | 2022 | Cited: 4
53. **Numerical analysis of hybrid nanofluid natural convection in a wavy walled porous enclosure: local thermal non-equilibrium model**
International Journal of Thermofluids 15, 100190, 2022 | 2022 | Cited: 43
54. **Analysis of heat transfer and fluid flow in a microchannel heat sink with sidewall dimples and fillet profile**
International Journal of Thermofluids 15, 100192, 2022 | 2022 | Cited: 50
55. **Supersonic Steam Ejectors: Comparison of Dry and Wet-steam CFD Simulation Models**
Journal of Engineering Science and Technology 17 (2), 1200-1212, 2022 | 2022 | Cited: 4
56. **Experimental and numerical study to develop TRANSYS model for an active flat plate solar collector with an internally serpentine tube receiver**
International Journal of Thermofluids 15, 100189, 2022 | 2022 | Cited: 37
57. **Comparative Performances of Natural Dyes Extracted from Mentha Leaves, Helianthus Annuus Leaves, and Fragaria Fruit for Dye-Sensitized Solar Cells**
Designs 6 (6), 100, 2022 | 2022 | Cited: 7
58. **Effect of supplementary cementitious materials on RC concrete piles**
AIP Conference Proceedings 2404 (080036 (2021)), 080036 (2021), 2021 | 2021 | Cited: 5
59. **Effect of ejector design parameters on flow structure inside the mixing chamber**
IOP Conference Series: Earth and Environmental Science 779, 2021 | 2021 | Cited: 11
60. **Preface: 2nd International Conference on Engineering and Science (ICES2021)**
AIP Conference Proceedings 2404 (1), 000001, 2021 | 2021
61. **Spray simulation of diesel fuel under different ambient pressures and temperatures**
AIP Conference Proceedings 2404 (1), 2021 | 2021 | Cited: 1
62. **Spray simulation of diesel fuel under different ambient pressures and temperatures**
AIP Conference Proceedings 2404 (1), 020005, 2021 | 2021 | Cited: 1
63. **Photos: 2nd International Conference on Engineering and Science (ICES2021)**
AIP Conference Proceedings 2404 (1), 010002, 2021 | 2021
64. **Preface: 2nd International Conference on Engineering and Science (ICES2021)**
AIP Conference Proceedings 2404 (1), 010001, 2021 | 2021

65. **International Journal of Thermofluids**
2021
66. **Tunable diode laser absorption spectroscopy in a supersonic steam jet**
Proceedings of the 9th Australian Conference on Laser Diagnostics, 91-94, 2019 | 2019 | Cited: 2
67. **SUPERSONIC CONDENSING STEAM JET MEASUREMENTS USING TDLAS**
University of Sothern Queensland- Australia, 2019 | 2019 | Cited: 1
68. **Tunable diode laser absorption spectroscopy in a supersonic steam jet**
Proceedings of the 9th Australian Conference on Laser Diagnostics, 2019 | 2019 | Cited: 2
69. **Measurement of water vapour in axisymmetric jet development using tdlas**
Measurement 10 (2018), 13, 2018 | 2018 | Cited: 5
70. **THEORETICAL STUDY OF DIRECT CONTACT CONDENSATION OF LAMINAR SHEAR LIQUID FILM**
Al-Qadisiyah Journal for Engineering Sciences 7 (2), 2014 | 2014
71. **NUMERICAL STUDY OF AIR CONDITION SYSTEM USING SOLAR PARABOLIC COLLECTOR**
Muthanna Journal of Engineering and Technology (MJET) 2 (1), 46-65, 2013 | 2013
72. **Numerical Study To Effect Of Thermal Loading On J-Integral Using Finite Element Method**
Al muthana university journal – Iraq 3 (2), 2013 | 2013
73. **International Journal of Thermofluids**
0
74. **Optimization of In-Cylinder Pressure Prediction in Biodiesel Engines Using Deep Neural Networks**
Available at SSRN 4930030, 0 | 0
75. **International Journal of Thermofluids**
0
76. **Optimization of In-Cylinder Pressure Prediction in Biodiesel Engines Using Deep Neural Networks**
Available at SSRN 4979904, 0 | 0
77. **International Journal of Thermofluids**
0
78. **Case Studies in Thermal Engineering**
0
79. **Thermal Performance of Solar Air Heater with U-Shaped Obstacles and Orifices**
Available at SSRN 5254677, 0 | 0
80. **THEORETICAL STUDY OF DIRECT CONTACT CONDENSATION OF LAMINAR SHEAR LIQUID FILM**
0
81. **Case Studies in Thermal Engineering**
0