

ALI H A ALWAEELI

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Summary

Dr Ali H.A. Al-Waeli is an Assistant Professor in the engineering department at the American University of Iraq – Sulaimani (AUIS). He has obtained his bachelor's degree in Electrical and Computer Engineering from Sohar University, Oman, in 2016. In 2019, Ali obtained a PhD in renewable energy from SERI, UKM. He has been included among "World's top 2% scientists" published by Stanford University (version-4 in 2022, version-6 in 2023) as he has an h-index of 38 and 5159 research citations with over 50 publications in Web of Science (WoS), and Scopus indexed international journals. He has served as a reviewer peer in many international journals and as a guest editor. He is also a member of international organizations such as IEEE, WASET, IAENG, and ISES. Moreover, Ali invented, and patented, the "Photovoltaic thermal (PV/T) collector with nano-PCM and nanofluids". In addition to authoring the book "Photovoltaic/Thermal (PV/T) Systems: Principles, Design, and Applications" which is published in Springer Nature. He has participated in several national talks and presentations and international competitions. In 2017 he won the 2nd place prize in the sustainability challenge and a silver medal in PECIPTA 2017 international exhibition. In 2018 he won a gold medal at the UKM 3-minute thesis competition and qualified to the national level. Finally, in 2023, he won the gold medal in Malaysia Technology Expo (MTE23). Ali is interested in research and teaching in the field of energy efficiency, energy storage, thermofluids, renewable energy, and solar energy, particularly photovoltaics (PV) and hybrid Photovoltaic thermal collectors.

Education

Ph.D. in Renewable Energy from National University of Malaysia (UKM) May 2019

Thesis: performance of photovoltaic thermal (PV/T) collectors with nanofluids and nano-PCM.

BEng in Electrical and Computer Engineering from Sohar University (SU) June 2016

Teaching experience

Assistant Professor – September 2021 – Present

American University of Iraq, Sulaimani - <https://auis.edu.krd>
Sulaymaniyah, Iraq

Senior lecturer – January 2021 – September 2021

National University of Malaysia – <http://www.ukm.my/portal/>
Bangi, Malaysia

Key achievements:

- Taught 23 courses (with 9 different courses). Courses included: transport phenomena, thermodynamics, system dynamics and control, circuits, applied electronics, Engineering computing and numerical analysis and Engineering Project Management.
- Taught a full load, reviewed existing syllabi, developed new syllabi, authored new and revised existing lab manuals.
- Chaired the teaching effectiveness committee, and was a member of ABET accreditation, scheduling, syllabi review, lab manual review, enrolment and retention committees. Also, member of the assessment committee.
- Currently supervising master and Ph.D. candidates.

Courses I can teach:

- Energy storage systems
- Renewable and Sustainable Engineering
- Fluid mechanics
- Project management

Research experience

Postdoctoral researcher – August 2019 – September 2020

National University of Malaysia – <http://www.ukm.my/portal/>
Bangi, Malaysia

Research assistant – February 2018 – May 2016

National University of Malaysia – <http://www.ukm.my/portal/>
Bangi, Malaysia

Research fellow – June 2016 – August 2016
Sohar University – <http://www.soharuni.edu.om/index.php/en/>
Sohar, Oman

Research fellow – June 2015 – August 2015
Sohar University – <http://www.soharuni.edu.om/index.php/en/>
Sohar, Oman

Research fellow – February 2012 – January 2013
Sohar University – <http://www.soharuni.edu.om/index.php/en/>
Sohar, Oman

Key achievements:

- Selected among “World’s top 2% scientists” published by Stanford University (version-4 in 2022).
- Published over 80 research articles in peer-reviewed international journals.
- Served as a principal investigator in a research project funded by TRC Oman.
- Developed several research proposals and was a participant of several grants amounting to US\$403,973.
- Collaborated with various research teams from different universities.
- Led the conceptualization, planning, coordination and implementation of the experimental work and the research activities in accordance with university strategy, policy and procedures, and funder requirements.
- Supervised the installation of 0.9 kW PV water pumping system and a total PV capacity of 7.74 kW.
- Conducted numerical research with various software such as Excel, MATLAB, HOMER, COMSOL, NeuroSolutions, PSpice, and TRNSYS.

INTERNSHIPS

PTA maintenance engineer – July 2014 – August 2014
Sohar Aluminium – <http://www.sohar-aluminium.com/>
Sohar, Oman

Preventing maintenance engineer – June 2014
Majan Electricity – <http://www.majanco.co.om/>
Sohar, Oman

Preventing maintenance engineer – January 2012
Majan Electricity – <http://www.majanco.co.om/>
Sohar, Oman

Responsibilities:

- Performing daily meetings and planning schemes for preventing maintenance of Pot Tending Assembly (PTA) machine in Sohar Aluminium company, along with following safety protocols.
- Performing daily preventing maintenance of electrical substations in Sohar area for Majan Electricity company, along with following safety protocols.
- Performing documentation and weekly reports on the role undertaken.

Competitions & Awards

2nd place prize in the sustainability challenge, 2017.
Silver medal in PECIPTA 2017 international exhibition, 2017.
Gold medal at the UKM 3-minute thesis competition, 2018.
Gold medal at Malaysia Technology Expo (MTE23), 2023.
World’s top 2% scientists (version-4), 2022.
World’s top 2% scientists (version-6), 2023.

Certifications

Certified Associate Project Manager (CAPM), Project Management Institute - PMI

March 2024

List of Publications

Total of 89 research papers published in peer-reviewed journals, 49 papers published in Q1 journals, 13 papers published in Q2 journals, 12 papers published in Q3 journals, 2 papers published in Q4 journals, 2 books published in Springer Nature, 6 book chapters, proceedings in 17 international and local conferences.

<https://scholar.google.com/citations?user=mee4yLYAAAAJ&hl=en>

No.	Publication (Authors, Year, Title, Journal, Volume, Pages)	Quartile	Impact factor
1.	Kazem, H.A., Chaichan, M.T., Al-Waeli, A.H. , Aloqab, W.T. and Alnaser, W.E. (2024). Causes, consequences, and treatments of induced degradation of solar PV: a comprehensive review. Arab Journal of Basic and Applied Sciences, 31(1), pp.177-191.	Q2	3.951
2.	Chaichan, M.T., Kazem, H.A., Al-Waeli, A.H. , Elawee, W.H., Fayad, M.A. and Sopian, K. (2024). Advanced techniques for enhancing solar distiller productivity: a review. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 46(1), pp.736-772.	Q2	3.269
3.	Kazem, H.A., Chaichan, M.T., Al-Waeli, A.H. and Sopian, K., 2024. A systematic review of photovoltaic/thermal applications in heat pumps systems. Solar Energy, 269, p.112299.	Q1	7.401
4.	Hakemzadeh, M.H., Sopian, K., Kazem, H.A., Al-Waeli, A.H. and Chaichan, M.T. (2024). Evaluating the techno-economic viability of different solar collectors integrated into an adsorption cooling system in tropical climate conditions. Solar Energy, 268, p.112304.	Q1	7.401
5.	Kazem, H. A., Chaichan, M. T., Al-Waeli, A. H. , & Sopian, K. (2023). Solar photovoltaic/thermal systems applications for electrical vehicle. Environment, Development and Sustainability, 1-30.	Q1	5.597
6.	Chaichan, M.T., Kazem, H.A., Al-Ghezi, M.K., Al-Waeli, A.H. , Ali, A.J., Sopian, K., Kadhum, A.A.H., Wan Isahak, W.N.R., Takriff, M.S. and Al-Amiery, A.A., (2023). Optimizing MWCNT-Based Nanofluids for Photovoltaic/Thermal Cooling through Preparation Parameters. ACS omega, 8(33), pp.29910-29925.	Q1	4.263
7.	Majeed, S.H., Abdul-Zahra, A.S., Mutasher, D.G., Dhahd, H.A., Fayad, M.A., Al-Waeli, A.H. , Kazem, H.A., Chaichan, M.T., Al-Amiery, A.A. and Roslam Wan Isahak, W.N., (2023). Cooling of a PVT System Using an Underground Heat Exchanger: An Experimental Study. ACS omega, 8(33), pp.29926-29938.	Q1	4.263
8.	Chaichan, M. T., Kazem, H. A., Al-Waeli, A. H. , Mohammed, S. A., Omara, Z. M., & Sopian, K. (2023). Performance enhancement of solar distillation system works in harsh weather conditions: An experimental study. Thermal Science and Engineering Progress, 101981.	Q1	5.284
9.	Kazem, H. A., Al-Waeli, A. H. , Chaichan, M. T., & Alnaser, W. E. (2023). Photovoltaic/thermal systems for carbon dioxide mitigation applications: a review. Frontiers in Built Environment, 9, 1211131.	Q2	2.94
10.	Chaichan, M.T., Kazem, H.A., Al-Waeli, A.H. , Sopian, K., Fayad, M.A., Alawee, W.H., Dhahad, H.A., Isahak, W.N.R.W. and Al-Amiery, A.A., (2023). Sand and Dust Storms' Impact on the Efficiency of the Photovoltaic Modules Installed in Baghdad: A Review Study with an Empirical Investigation. Energies, 16(9), p.3938.	Q1	3.66
11.	Chaichan, M.T., Kazem, H.A., Al-Ghezi, M.K., Al-Waeli, A.H. , Ali, A.J., Sopian, K., Kadhum, A.A.H., Isahak, W.N.R.W., Takriff, M.S. and Al-Amiery, A.A., (2023). Effect of Different Preparation Parameters on the Stability and Thermal Conductivity of MWCNT-Based Nanofluid Used for Photovoltaic/Thermal Cooling. Sustainability, 15(9), p.7642.	Q2	4.39
12.	Kazem, H. A., Al-Waeli, A. H. , Chaichan, M. T., Sopian, K., Al Busaidi, A. S., & Gholami, A. (2023). Photovoltaic-thermal systems applications as dryer for agriculture sector: A review. Case Studies in Thermal Engineering, 103047.	Q1	7.055
13.	Kazem, H. A., Al-Waeli, A. H. , Chaichan, M. T., Sopian, K., Gholami, A., & Alnaser, W. E. (2023). Dust and cleaning impact on the performance of photovoltaic: an outdoor experimental study. Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 45(1), 3107-3124.	Q3	2.486
14.	Assadeg, J., Sopian, K., Ibrahim, A., Fudholi, A., Alwaeli, A. H. , & Abd Hamid, A. S. (2023). Thermal and Thermo-hydraulic Performance of Finned Double-Pass Solar Air Collector Utilizing Cylindrical Capsules Nano-Enhanced PCM. International Journal of Renewable Energy Research (IJRER), 13(1), 125-135.	Q3	1.607

15.	Gholami, A., Ameri, M., Zandi, M., Ghoachani, R. G., Gerashi, S. J., Kazem, H. A., & Al-Waeli, A. H. (2023). Impact of harsh weather conditions on solar photovoltaic cell temperature: Experimental analysis and thermal-optical modeling. <i>Solar Energy</i> , 252, 176-194.	Q1	7.128
16.	Roshdan, W. N. A. W., Jarimi, H., Ibrahim, A., Sopian, K., & Al-Waeli, A. H. (2023). Indoor Performance Analysis of a Novel Double-Pass photovoltaic/thermal (PV/T) Asymmetric Compound Parabolic Concentrator (ACPC) Solar Collector. In <i>IOP Conference Series: Materials Science and Engineering</i> (Vol. 1278, No. 1, p. 012009). IOP Publishing.	-	0.479
17.	Al-Waeli, A. H., Sopian, K., Kazem, H. A., & Chaichan, M. T. (2023). Design configuration and operational parameters of bi-fluid PVT collectors: an updated review. <i>Environmental Science and Pollution Research</i> , 1-19.	Q2	5.034
18.	Kazem, H. A., Chaichan, M. T., & Al-Waeli, A. H. (2022). A comparison of dust impacts on polycrystalline and monocrystalline solar photovoltaic performance: an outdoor experimental study. <i>Environmental Science and Pollution Research</i> , 29(59), 88788-88802.	Q2	5.034
19.	Kazem, H. A., Chaichan, M. T., Al-Waeli, A. H. , Al-Badi, R., Fayad, M. A., & Gholami, A. (2022). Dust impact on photovoltaic/thermal system in harsh weather conditions. <i>Solar Energy</i> , 245, 308-321.	Q1	7.128
20.	Shahsavari, A., Alwaeli, A. H. , Azimi, N., Rostami, S., Sopian, K., Arıcı, M., ... & Afrand, M. (2022). Exergy studies in water-based and nanofluid-based photovoltaic/thermal collectors: Status and prospects. <i>Renewable and Sustainable Energy Reviews</i> , 168, 112740.	Q1	18.916
21.	Chaichan, M. T., Mahdi, M. T., Kazem, H. A., Al-Waeli, A. H. , Fayad, M. A., Al-Amiery, A. A., ... & Takriff, M. S. (2022). Modified Nano-Fe ₂ O ₃ -Paraffin Wax for Efficient Photovoltaic/Thermal System in Severe Weather Conditions. <i>Sustainability</i> , 14(19), 12015.	Q2	4.326
22.	Kazem, H. A., Chaichan, M. T., Al-Waeli, A. H. , Jarimi, H., Ibrahim, A., & Sopian, K. (2022). Effect of Temperature on the Electrical and Thermal Behaviour of a Photovoltaic/Thermal System Cooled Using SiC Nanofluid: An Experimental and Comparison Study. <i>Sustainability</i> , 14(19), 11897.	Q2	4.326
23.	Kazem, H. A., Chaichan, M. T., Al-Waeli, A. H. , & Gholami, A. (2022). A systematic review of solar photovoltaic energy systems design modelling, algorithms, and software. <i>Energy Sources, Part A: Recovery, Utilization, and Environmental Effects</i> , 44(3), 6709-6736.	Q3	2.486
24.	Jarimi, H., Al-Waeli, A. H. , Razak, T. R., Bakar, M. N. A., Fazlizan, A., Ibrahim, A., & Sopian, K. (2022). Neural network modelling and performance estimation of dual-fluid photovoltaic thermal solar collectors in tropical climate conditions. <i>Renewable Energy</i> , 197, 1009-1019.	Q1	8.652
25.	Kazem, H. A., Chaichan, M. T., & Al-Waeli, A. H. (2022). A comparison of dust impacts on polycrystalline and monocrystalline solar photovoltaic performance: an outdoor experimental study. <i>Environmental Science and Pollution Research</i> , 1-15.	Q2	5.034
26.	Nawab, F., Abd Hamid, A. S., Alwaeli, A. , Arif, M., Fauzan, M. F., & Ibrahim, A. (2022). Evaluation of Artificial Neural Networks with Satellite Data Inputs for Daily, Monthly, and Yearly Solar Irradiation Prediction for Pakistan. <i>Sustainability</i> , 14(13), 7945.	Q2	2.486
27.	Kazem, H. A., Chaichan, M. T., & Al-Waeli, A. H. (2022). Effect of CuO-water-ethylene glycol nanofluids on the performance of photovoltaic/thermal energy system: an experimental study. <i>Energy Sources, Part A: Recovery, Utilization, and Environmental Effects</i> , 44(2), 3673-3691.	Q3	2.486
28.	Roshdan, W. N. A. W., Jarimi, H., Al-Waeli, A. H. , Ramadan, O., & Sopian, K. (2022). Performance enhancement of double pass photovoltaic/thermal solar collector using asymmetric compound parabolic concentrator (PV/T-ACPC) for façade application in different climates. <i>Case Studies in Thermal Engineering</i> , 34, 101998.	Q1	6.511
29.	Kazem, H. A., Chaichan, M. T., Al-Waeli, A. H. , & Sopian, K. (2022). Effect of dust and cleaning methods on mono and polycrystalline solar photovoltaic performance: An indoor experimental study. <i>Solar Energy</i> , 236, 626-643.	Q1	5.742
30.	Kazem, H. A., Yousif, J. H., Chaichan, M. T., Al-Waeli, A. H. , & Sopian, K. (2022). Long-term power forecasting using FRNN and PCA	-	-

- models for calculating output parameters in solar photovoltaic generation. *Heliyon*, e08803.
31. Wajid, N. M., Abidin, A. M. Z., Hakemzadeh, M., Jarimi, H., Fazlizan, A., Fauzan, M. F., ..., **Al-Waeli, A.H.**, & Sopian, K. (2021). Solar adsorption air conditioning system–Recent advances and its potential for cooling an office building in tropical climate. *Case Studies in Thermal Engineering*, 27, 101275. Q1 4.724
 32. Chaichan, M. T., Kazem, H. A., **Al-Waeli, A. H.**, & Sopian, K. (2021). Controlling the melting and solidification points temperature of PCMs on the performance and economic return of the water-cooled photovoltaic thermal system. *Solar Energy*, 224, 1344-1357. Q1 5.742
 33. Assadeg, J., **Al-Waeli, A. H.**, Fudholi, A., & Sopian, K. (2021). Energetic and exergetic analysis of a new double pass solar air collector with fins and phase change material. *Solar Energy*, 226, 260-271. Q1 5.742
 34. Kazem, H. A., **Al-Waeli, A. H.**, Chaichan, M. T., & Sopian, K. (2021). Numerical and experimental evaluation of nanofluids based photovoltaic/thermal systems in Oman: Using silicone-carbide nanoparticles with water-ethylene glycol mixture. *Case Studies in Thermal Engineering*, 26, 101009. Q1 4.010
 35. Sopian, K., **Al-Waeli, A. H.**, & Kazem, H. A., (2021). Nano enhanced fluids and latent heat storage material for photovoltaic modules: A case study and parametric analysis. *International Journal of Energy Research*. Q1 3.568
 36. Kazem, H. A., Chaichan, M. T., **Al-Waeli, A. H.**, & Sopian, K. (2021). Investigation of a nanofluid-based photovoltaic thermal system using Single-Wall Carbon Nanotubes: an experimental study. *International Journal of Energy Research*. Q1 3.568
 37. Kazem, H. A., Chaichan, M. T., **Al-Waeli, A. H.**, & Sopian, K. (2021). Comparison and evaluation of solar photovoltaic thermal system with hybrid collector: an experimental study. *Thermal Science and Engineering Progress*, 22, 100845. Q1 4.395
 38. Moshery, R., Chai, T. Y., Sopian, K., Fudholi, A., & **Al-Waeli, A. H.** (2021). Solar Energy Thermal Performance of Jet-Impingement Solar Air Heater with Transverse Ribs Absorber Plate. *Solar Energy*, 214, 355-366. Q1 4.608
 39. **Al-Waeli, A. H.**, Kazem, H. A., Chaichan, M. T., & Sopian, K. (2020). A review of photovoltaic thermal systems: Achievements and applications. *International Journal of Energy Research*. Q1 3.568
 40. Kazem, H. A., **Al-Waeli, A. H.**, Chaichan, M. T., Al-Waeli, K. H., Al-Aasam, A. B., & Sopian, K. (2020). Evaluation and comparison of different flow configurations PVT systems in Oman: A numerical and experimental investigation. *Solar Energy*, 208, 58-88. Q1 4.608
 41. Sopian, K., Alkhair, M., Abed, A. M., Elhub, B., Elbreki, A. M., & **Al-Waeli, A. H.** (2020). Recent Advances in Solar Thermal Assisted Air Conditioning Systems. In *Proceedings of the 6th International Conference on Engineering & MIS 2020* (pp. 1-10). -
 42. Kazem, H. A., Chaichan, M. T., **Al-Waeli, A. H.**, & Sopian, K. (2020). Evaluation of aging and performance of grid-connected photovoltaic system northern Oman: Seven years' experimental study. *Solar Energy*, 207, 1247-1258. Q1 4.608
 43. Kazem, H. A., Chaichan, M. T., **Al-Waeli, A. H.**, & Sopian, K. (2020). A review of dust accumulation and cleaning methods for solar photovoltaic systems. *Journal of Cleaner Production*, 123187. Q1 7.246
 44. Kazem, H. A., Chaichan, M. T., **Al-Waeli, A. H.**, & Sopian, K. (2020). A novel model and experimental validation of dust impact on grid-connected photovoltaic system performance in Northern Oman. *Solar Energy*, 206, 564-578. Q1 4.608
 45. **Al-Waeli, A. H.**, Sopian, K., Kazem, H. A., & Chaichan, M. T. (2020). Evaluation of the electrical performance of a photovoltaic thermal system using nano-enhanced paraffin and nanofluids. *Case Studies in Thermal Engineering*, 100678. Q1 3.783
 46. Sopian, K., **Alwaeli, A. H. A.**, & Kazem, H. A., (2020). Advanced photovoltaic thermal collectors. *Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering*, 234 (2), p. 206–213. Q2 1.476
 47. Assadeg, J., **Alwaeli, A. H.**, Sopian, K., Moria, H., Hamid, A. S. A., & Fudholi, A., (2020). Solar Assisted Heat Pump System for High Quality Drying Applications: A Critical Review. *International Journal of Renewable Energy Research*, 10(1), p. 303-316. Q3 1.761

48.	Abusaibaa, G. Y., Al-Aasam, A. B., Al-Waeli, A. H. , Al-Fatlawi, A. W. A., & Sopian, K. (2020). Performance Analysis of Solar Absorption Cooling Systems in Iraq. <i>International Journal of Renewable Energy Research</i> , 10(1), p. 223-230.	Q3	1.761
49.	Shahsavari, A., Moayedi, H., Al-Waeli, A. H. , Sopian, K., & Chelvanathan, P., (2020). Machine learning predictive models for optimal design of building-integrated photovoltaic-thermal collectors. <i>International Journal of Energy Research</i> .	Q1	3.568
50.	Sopian, K., Al-Waeli, A.H. and Kazem, H.A., (2020). Energy, exergy and efficiency of four photovoltaic thermal collectors with different energy storage material. <i>Journal of Energy Storage</i> , 29, p. 1-10.	Q1	4.14
51.	Ahmoum, H., Chelvanathan, P., Su'ait, M.S., Boughrara, M., Li, G., Al-Waeli, A.H. , Sopian, K., Kerouad, M. and Amin, N., (2020). Impact of preheating environment on microstructural and optoelectronic properties of Cu ₂ ZnSnS ₄ (CZTS) thin films deposited by spin-coating. <i>Superlattices and Microstructures</i> , p.106452.	Q2	2.3
52.	Chaichan, M.T., Kazem, H.A., Al-Waeli, A.H. and Sopian, K., (2020). The effect of dust components and contaminants on the performance of photovoltaic for the four regions in Iraq: a practical study. <i>Renewable Energy and Environmental Sustainability</i> , 5, p.3.	-	-
53.	Al-Waeli, A.H. , Kazem, H.A., Yousif, J.H., Chaichan, M.T. and Sopian, K., (2020). Mathematical and neural network modeling for predicting and analyzing of nanofluid-nano PCM photovoltaic thermal systems performance. <i>Renewable Energy</i> , 145, pp.963-980.	Q1	5.439
54.	Al-Waeli, A.H. , Sopian, K., Kazem, H.A. and Chaichan, M.T., (2019). Novel criteria for assessing PV/T solar energy production. <i>Case Studies in Thermal Engineering</i> , 16, p.100547.	Q1	3.783
55.	Kazem, H.A., Yousif, J., Chaichan, M.T. and Al-Waeli, A.H. , (2019). Experimental and deep learning artificial neural network approach for evaluating grid-connected photovoltaic systems. <i>International Journal of Energy Research</i> , 43(14), pp.8572-8591.	Q1	3.568
56.	Ajeel, R.K., Salim, W.I., Sopian, K., Yusoff, M.Z., Hasnan, K., Ibrahim, A. and Al-Waeli, A.H. , (2019). Turbulent convective heat transfer of silica oxide nanofluid through corrugated channels: An experimental and numerical study. <i>International Journal of Heat and Mass Transfer</i> , 145, p.118806.	Q1	4.752
57.	Al-Waeli, A.H. , Kazem, H.A., Chaichan, M.T. and Sopian, K., (2019). Experimental investigation of using nano-PCM/nanofluid on a photovoltaic thermal system (PVT): Technical and economic study. <i>Thermal Science and Engineering Progress</i> , 11, pp.213-230.	Q1	4.362
58.	Al-Waeli, A.H. , Sopian, K., Yousif, J.H., Kazem, H.A., Boland, J. and Chaichan, M.T., (2019). Artificial neural network modeling and analysis of photovoltaic/thermal system based on the experimental study. <i>Energy Conversion and Management</i> , 186, pp.368-379.	Q1	7.963
59.	Sopian, K., Alwaeli, A.H. , Ibrahim, A. and Kazem, H.A., (2019). Evaluation and Design Criteria of Photovoltaic Thermal (PV/T). <i>Materials Today: Proceedings</i> , 19, pp.1111-1118.	-	-
60.	Sopian, K., Alwaeli, A.H. , Al-Shamani, A.N. and Elbreki, A.M., (2019). Thermodynamic analysis of new concepts for enhancing cooling of PV panels for grid-connected PV systems. <i>Journal of Thermal Analysis and Calorimetry</i> , 136(1), pp.147-157.	Q2	2.502
61.	Al-Waeli, A.H. , Chaichan, M.T., Kazem, H.A. and Sopian, K., (2019). Evaluation and analysis of nanofluid and surfactant impact on photovoltaic-thermal systems. <i>Case Studies in Thermal Engineering</i> , 13, p.100392.	Q1	3.783
62.	Al-Waeli, A.H. , Chaichan, M.T., Sopian, K. and Kazem, H.A., (2019). Influence of the base fluid on the thermo-physical properties of PV/T nanofluids with surfactant. <i>Case Studies in Thermal Engineering</i> , 13, p.100340.	Q1	3.783
63.	Al-Waeli, A.H. , Chaichan, M.T., Sopian, K., Kazem, H.A., Mahood, H.B. and Khadom, A.A., (2019). Modeling and experimental validation of a PVT system using nanofluid coolant and nano-PCM. <i>Solar Energy</i> , 177, pp.178-191.	Q1	5.264
64.	Al-Waeli, Ali HA , K. Sopian, Ibrahim, A, Mat, S, and Ruslan, M. H., (2018). Concepts and Challenges of Nanofluids and Phase Change Material (PCM) in Photovoltaic Thermal (PV/T) Collectors: A Review.	-	0.148
65.	Sopian, K., Alwaeli, A.H. , Hasan, H.A. and Al-Shamani, A.N., (2018). Advances in high efficiency photovoltaic thermal solar collectors.	Q3	1.088

Journal of Advanced Research in Fluid Mechanics and Thermal Sciences, 47(1), pp.1-7.		
66.	Safaei, J., Mohamed, N.A., Noh, M.F.M., Soh, M.F., Elbreki, A.M., Ludin, N.A., Ibrahim, M.A., Al-Waeli, A.H. , Isahak, W.N.R.W. and Teridi, M.A.M., (2018). Simultaneous enhancement in light absorption and charge transportation of bismuth vanadate (BiVO ₄) photoanode via microwave annealing. <i>Materials Letters</i> , 233, pp.67-70.	Q2 3.019
67.	Zulkifle, I., Alwaeli, A. H. , Ruslan, M. H., Ibarahim, Z., Othman, M. Y. H., & Sopian, K., (2018). Numerical investigation of V-groove air-collector performance with changing cover in Bangi, Malaysia. <i>Case Studies in Thermal Engineering</i> , 12, pp. 587-599.	Q1 3.783
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Note: Quartile and impact factor information are taken from Scimago (SJR) database based on date of publication. Hence, the same journal might be ranked Q1 and Q2 depending on year of publication. The impact factor may differ according to the time of publication.