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CONTACT INFO

Name	Ali H. A. Al-Waeli
Address	Sulaymaniyah, 46001, Iraq
Institute email	ali.alwaeli@auis.edu.krd
Email address	Ali9Alwaeli@gmail.com
Website	https://www.dr.alwaeli.org/
Researchgate	https://www.researchgate.net/profile/Ali_Al-Waeli
LinkedIn	https://www.linkedin.com/in/ali-al-waeli-a76a33124/

PERSONAL PARTICULARS

Name	Ali H. A. Al-Waeli
Year of birth	1994
Nationality	Iraqi
Educational level	Ph.D in Renewable Energy
Current position	Assistant Professor in the American University of Iraq - Sulaimani (AUIS)



BIBLIOMETRIC DATA

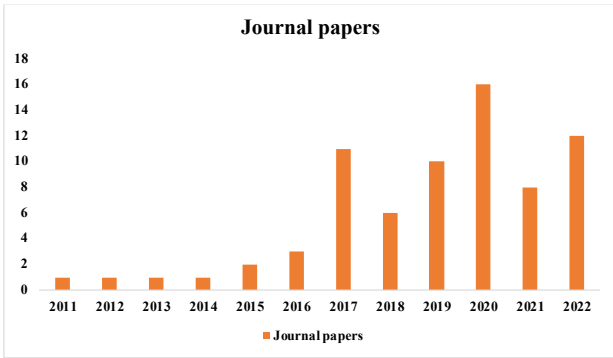
Googlescholar	
Documents	90+
Citations	5,703
H-Index	41
I-10 Index	77

ResearchGate	
Documents	87
Citations	5,102
H-Index	39
Reads	102,065
Research Interest Score	4,468

Web of Science (WoS)	
Documents	72
Citations	1,273
H-Index	24
Average Citation per Item	17.68

SCOPUS	
Documents	85
Citations	3,396
H-Index	30

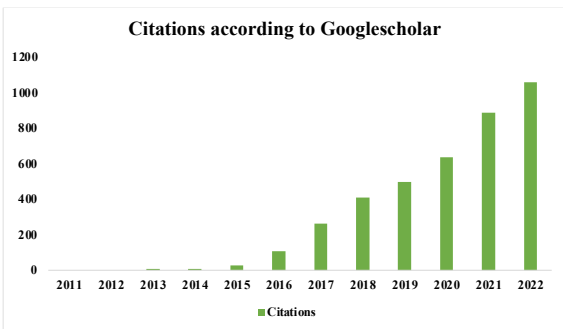
KEY PERFORMANCE INDICATORS



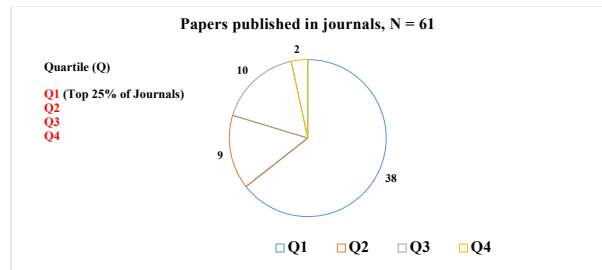
Number of published papers throughout the years (2011-2022)



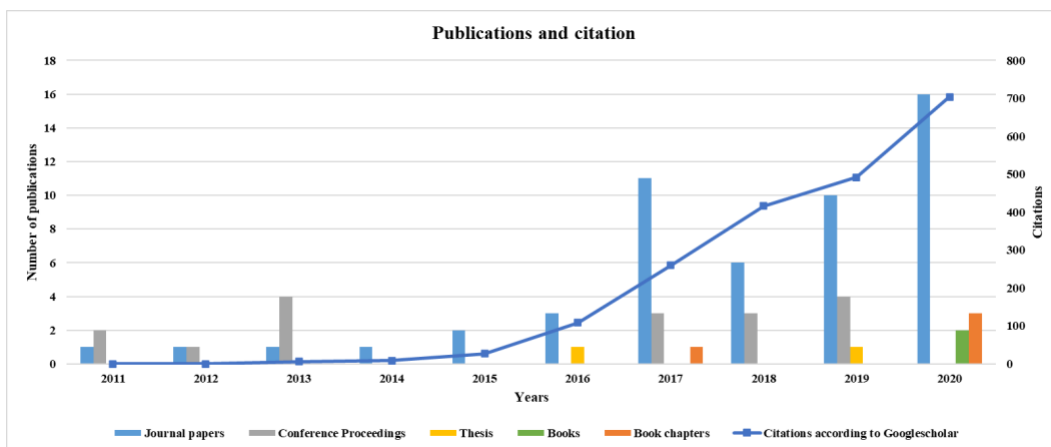
Number of conference proceedings throughout the years (2011-2022)



Number of citations on Google Scholar throughout the years (2011-2022)



Papers published in quartile journals (Q1-Q4). The papers included are considered for years from 2011 to 2022



Number of published material (and documents) and citations received throughout the years from 2011-2020

PERSONAL STATEMENT

I am a highly motivated electrical engineer with a proven track record of effective communication skills. My experience includes active participation in research teams and successful completion of government-funded projects. I have demonstrated expertise in overseeing crucial tasks such as the installation, operation, and maintenance of photovoltaic water pumping systems.

My professional philosophy revolves around the belief that hard work and consistency are key to achieving career goals. In academia, I emphasize the importance of improvisation, adaptation, and overcoming challenges to thrive. At the core of my career aspirations lies a commitment to continuous self-growth and the pursuit of professional security.

My overarching goal is to contribute to the academic community by producing meaningful research, mentoring young academics, and spearheading purposeful projects with global impact. I am dedicated to leveraging my skills and knowledge to benefit society and the environment. Ultimately, I envision myself making a positive and lasting impact on the world around me.

BIOGRAPHY

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, WSSET, 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.

RESEARCH AREAS

- Renewable energy
- Solar energy, photovoltaics
- PVT collectors
- Hybrid PV systems with Genset, Wind turbines and Hydrogen generators
- Nanofluids, Nano-PCM, organic PCM
- Energy efficiency
- Artificial Neural Networks (ANN), Machine learning, Predictive algorithms
- Life Cycle Cost Assessment, Levelized cost of electricity
- Hybrid micro-grid renewable designs
- Rural electrification
- Sustainability in Palm oil industry
- Internet of Things (IoT)

ACADEMIC QUALIFICATIONS

Certificate	University	Country	Years of study
Ph.D in Renewable Energy	National University of Malaysia (UKM)	Malaysia	2016-2019
BENG in Electrical and Computer Engineering	Sohar University (SU)	Oman	2012-2016
Secondary School Diploma	Sohar Secondary School	Oman	2011-2012
Intermediate School	Ahmed Bin Said Intermediate School	Oman	2007-2010
Primary School	Al-Kawarizmi Private School	Oman	2003-2007

Other certifications

Certification	Institute	Date obtained
Certified Associate Project Manager (CAPM ©)	Project Management Institute (PMI)	March 2024

JOB EXPERIENCE

Date	Job position	Job status	Institute	Remarks
September 2021- Ongoing	Assistant Professor	Ongoing	American University of Iraq – Sulaimani (AUIS)	Assistant Professor in Energy Engineering
September 2020 – September 2021	Senior Lecturer	2 year-contract, Full time	National University of Malaysia (UKM)	DS51 – Senior Lecturer
August 2020	Post-doctoral Researcher	1 year-contract, Full time	National University of Malaysia (UKM)	The post-doctorate is awarded by Centre of Research and Instrumentation Management
August 2019 – July 2020	Post-doctoral Researcher	1 year-contract, Full time	National University of Malaysia (UKM)	The post-doctorate is awarded by Centre of Research and Instrumentation Management, activity code MI-2019-011.
March 2018 – May 2018	Research Assistant	3 months- contract, Part time	National University of Malaysia (UKM)	Position awarded From a project sponsored by Kementerian Pendidikan, code GP-K007209.

EXPERIENCE

- **Experience in research:** 10 years.
- **Experience in peer review:** 7 years.
- **Experience in working on funded projects:** 8 years.
- **Experience in research fellowships:** 1 year and 9 months.
- **Experience in lecturing:** 4 years.
- **Started supervising master's degree and PhD degree candidates in 2021.**
 - Wan Nur Adilah Binti Wan Roshdan, Master of science (Renewable Energy), UKM, Ongoing.
 - Mais Mahmood, PhD (Chemical Engineering), UPM, Ongoing.
 - Abdalrahman Mohammed Obead, PhD (Renewable Energy), UKM, Ongoing.
 - Hariam Azeez Luqman, PhD (Renewable Energy), UKM, Ongoing.
- **Undergraduate students taught:** 218+
- **Undergraduate courses taught:** 14+
- **Undergraduate advisees:** 13

Experience in the American University of Iraq – Sulaimani (AUIS)

- AUIS Engineering Department Council.
- ABET accreditation taskforce member. Wrote criteria 2 of the self-study report.
- Chair of the Teaching Effectiveness Committee.
- Department syllabi review committee.
 - Prepared new course syllabi
 - Applied circuit
 - Energy storage systems
 - System dynamics and control
 - Transport phenomena
- Department lab manual review committee.
 - Fabrication shop lab manual, main author
 - Circuits lab manual, main author
 - System dynamics and Control lab manual, main author
- Department scheduling committee.
- Engineering Statistics syllabus review committee.
- Department enrolment and retention committee.

TAUGHT COURSES

List

- Fabrication shop
- Engineering computing
- Transport phenomena
- Control systems and automation
- Circuits
- Thermodynamics
- Applied Electronics
- Engineering Project Management
- Renewable Energy
- Design II Capstone
- Fundamentals of Photovoltaic (PV) systems
- Design of energy systems using HOMER
- Introduction to Photovoltaic thermal (PV/T)
- Thermophysical testing and characterization of nanofluids
- Solar energy solutions in the industry
- Machine learning for Solar Energy estimation
- Nanofluids for heat transfer applications

Courses I can teach

- Electrical and computer engineering courses, inclusive of the following:
 1. Circuits and electronics
 2. Energy storage and power distribution
 3. Introduction to Electric power systems
- Renewable and sustainable energy courses
- Energy generation, conversion, storage, transmission & utilization.
- Electric power generation, transmission, and distribution
- Fundamentals of Research Methodology

Currently co-supervising Master's and Ph.D. candidates.

INTERNSHIPS

- **July – August 2014.** PTA maintenance engineering in maintenance department at SOHAR ALUMINIUM Company (<http://www.sohar-aluminium.com/>), Sohar.
- **June 2014.** Preventing maintenance engineer at MAJAN ELECTRICITY Company (<http://www.majanco.co.om/>), Sohar.
- **January 2012.** Preventing maintenance engineer at MAJAN ELECTRICITY Company (<http://www.majanco.co.om/>), Sohar.

FELLOWSHIPS AND ASSISTANTSHIPS

- **March 2018 – May 2018.** Research Assistant on project sponsored by Kementerian Pendidikan (code: GP-K007209) titled “V-groove solar air collector with changing cover for tropical climate”, Research Grant Agreement No. TRGS/1/2014/UKM/01/11/4. (Three months).
- **June – August 2016.** Research Fellow on The Research Council of Oman sponsored project, "Study and Design of Optimum Control System for a 12 MW Hybrid Power Plant for Masirah Island", Research Grant Agreement No. ORG NTC IE 13 11. (Three months).
- **June – August 2015.** Research Fellow on The Research Council of Oman sponsored project, "Study and Design of Optimum Control System for a 12 MW Hybrid Power Plant for Masirah Island", Research Grant Agreement No. ORG NTC IE 13 11. (Three months).
- **February 2012 – January 2013.** Research Fellow on The Research Council of Oman sponsored project, "Feasibility Study of Solar Energy (Photovoltaic) Systems in Oman", Research Grant Agreement No. ORG SU EI 11 010. (One year).

Total: 1 year and 9 months

LANGUAGES

- **English** (Fluent - IELTS Grade 8).
- **Arabic** (Native).
- **Malaysian** (Completed two courses in elementary Malay language).
- **Kurdish – Sorani** (Completed two courses in elementary Sorani language).

RESEARCH STATEMENT

To me, scientific research is the foundation of progress for humanity. The role of a researcher is to identify problems and research questions, then attempt to solve them through the scientific method.

I have good knowledge of electrical and computer engineering, renewable energy, and solar energy research. I have spent the better part of the last eight years reading, writing, and publishing works on renewable and solar energy for Oman, Iraq & Malaysia. Moreover, I am confident that my research experience will be an asset to your organization.

My responsibilities have included the creation of conceptual frameworks, mathematical modelling, experimental setup, and data analysis through various techniques.

My engineering background allows me to extend to other aspects of engineering and project management. Although I am an electrical and computer engineer, I have studied courses that allow me to link to other fields such as communication, mechanical and chemical engineering.

I have worked closely with PV installation professionals to design and build a broad range of systems such as standalone, grid-connected, Photovoltaic thermal (PV/T) and hybrid PV-wind and PV-Genset systems.

As a postdoctoral researcher, I have also helped many graduates and postgraduates in my institute to perform experiments such as mixing of nano-material and base fluids, thermo-physical property tests, IV-curve testing, and Artificial Neural Networks.

During my PhD and postdoctoral research, I was able to research nanofluid-based PV/T systems and later invented a nanofluid-based PV/T with nano-enhanced Phase Change Material. Moreover, I was able to integrate different Neural Networks to predict PV/T system performance. I was also able to publish 24 papers in Q1 journals (Web of Science-indexed), five papers in Q2 journals and have published a textbook in Springer Nature, titled “Photovoltaic/Thermal (PV/T) Systems: Principles, Design, and Applications”. As an assistant professor, I continued my research and began to expand its scope. Moreover, I started co-supervising master’s and PhD candidates.

In future research, I plan to continue discovering the optimum material and design parameters for enhancing the performance of photovoltaic modules and integrate my research with modern methods of data interpretation and regression.

- For the material aspect, I intend to continue research in nanofluids and nano-enhanced Phase Change Material.
- For design parameters, I intend to investigate coupling PV and PV/T collectors with other components such as Spectral splitting filters and Thermoelectric generators.
- The optimization of the design for improving photovoltaic performance is the first step; moving forward, I plan to focus on Building Integrated PV and PV/T systems and invent improved PV monitoring systems.

I believe in my ability to apply for, and obtain, grants to carry out research projects; as I have done so in the past. I am dedicated to achieving tasks, and I am proud to have never missed a deadline. I am always willing to learn and self-develop. I believe in building strong relationships with all departments in an organization and giving all my effort to the success of the faculty. I can work within a team and collaborate with international researchers, as I have done in the past.

PUBLICATIONS

Publication dashboard

Notes: Impact Factor (IF) records are according to Scientific Journal Ranking (SJR) for the year of publication or specified. "Q" means the rank of the journal (quartile) in the topic (i.e. Energy & Fuels) category where Q1 means the highest and Q4 the lowest.

Total Number of Publications: 115

Journals: 89

International and National Conference and seminar Proceedings: 17

Book chapters: 7

Technical Report: 2

Publication index:

Q1	Q2
47	15
Q3	Q4
12	2

Research papers

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. <i>Sustainability</i> , 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. <i>Case Studies in Thermal Engineering</i> , 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. <i>Energy Sources, Part A: Recovery, Utilization, and Environmental Effects</i> , 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. <i>International Journal of Renewable Energy Research (IJRER)</i> , 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).	Q2	4.326

	Modified Nano-Fe ₂ O ₃ -Paraffin Wax for Efficient Photovoltaic/Thermal System in Severe Weather Conditions. <i>Sustainability</i> , 14(19), 12015.		
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. <i>Heliyon</i> , 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. <i>Case Studies in Thermal Engineering</i> , 27, 101275.	Q1	4.724
32.	Chaichan, M. T., Kazem, H. A., Al-Waeli, A. H. , & Sopian, K.	Q1	5.742

	(2021). Controlling the melting and solidification points temperature of PCMs on the performance and economic return of the water-cooled photovoltaic thermal system. <i>Solar Energy</i> , 224, 1344-1357.		
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. <i>Solar Energy</i> , 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. <i>Case Studies in Thermal Engineering</i> , 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. <i>International Journal of Energy Research</i> .	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. <i>International Journal of Energy Research</i> .	Q1	3.568
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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.			

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- Sopian, K., **Alwaeli, A.H.** and Kazem, H.A., 2019. Advances in High Performance PV/T Solar Collectors. The 22nd Congress on Thermal Science and Technology (CTST 2019), Kocaeli, Turkey.
- Sopian, K., **Alwaeli, A.H.**, Ibrahim, A. and Kazem, H.A., 2018. Evaluation and Design Criteria of Photovoltaic Thermal (PV/T). International Conference on Chemical Sciences and Engineering, Melaka, Malaysia.
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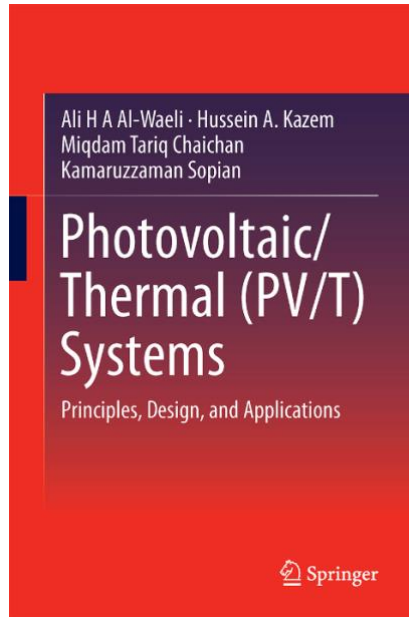
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- Al-Hamdani, O., Kazem, H.A., Al-Mansori, M.H., Ambusaidi, K.A.K., Hasoon, F., Al-Ajmi, M., Al-Sheidi, S., **Al-Waeli A.H.** and Al-Breiki, M. 2011. The Design and Economic Feasibility of Solar Water Heating Systems in Oman. International Conference on Harnessing Technology (ICHT), Muscat, Oman.

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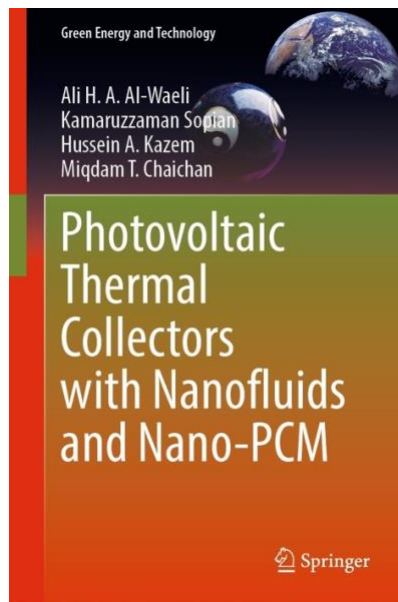
Doc.	Type of thesis	Title	Contribution	Year published
1	Ph.D	Performance of photovoltaic thermal (PV/T) collectors with nanofluid and nano-PCM	Sole author	2019
2	BEng	Comparison Study of Photovoltaic and Diesel Pumping Systems for Rural Areas in Oman	Main Co-author	2016

Books

- **Al-Waeli, A.H.A.,** Kazem, H.A., Chaichan, M.T., Sopian, K. Photovoltaic/Thermal (PV/T) Systems: Principles, Design, and Applications. 2020, Springer Nature.

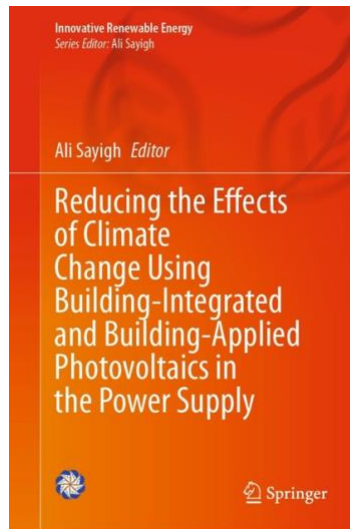


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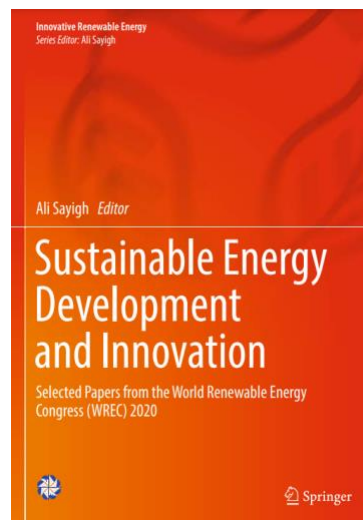


Book Chapters

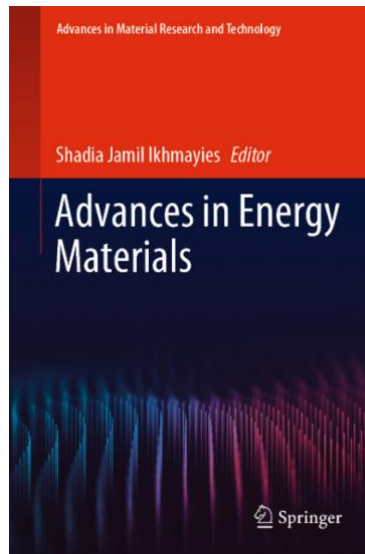
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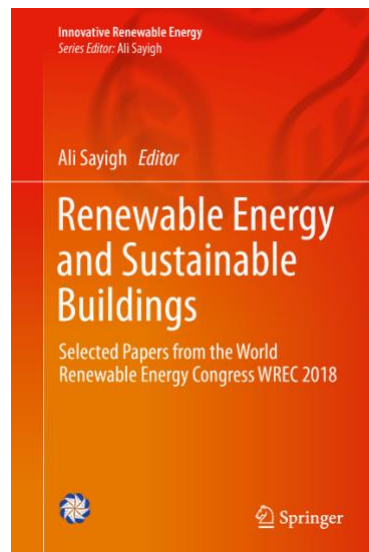
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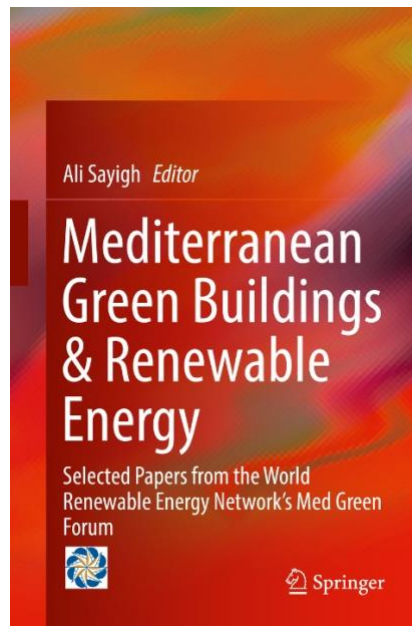
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- Kazem, H.A., Chaichan, M.T. and **Alwaeli, A.H., 2020.** The Impact of Dust's Physical Properties on Photovoltaic Modules Outcomes. In *Renewable Energy and Sustainable Buildings* (pp. 495-506). Springer, Cham.
- Sopian, K., **Alwaeli, A.H.,** Al-Shamani, A.N. and Othman, M.Y.H., 2020. Cooling of PV Panels for Performance Enhancement of Grid-Connected Systems. In *Renewable Energy and Sustainable Buildings* (pp. 139-147). Springer, Cham.



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Presentations**Presentations/seminars given:**

No.	Presentation title	Field	Venue/Platform	Occasion	Year performed
1	Optimum Design for Photovoltaic Water Pumping System for Rural Area in Oman	PVWPS	Sohar University (SU)	1. Job fair, SU 2. Student week, SU 3. Students week, Sultan Qaboos University 4. Students week, Applied Science University	2015
2	Comparison Study of Photovoltaic and Diesel Pumping Systems for Rural Areas in Oman	PVWPS	Sohar University (SU)	Final year project presentation (defense)	2016
3	Evaluation of Nanofluid and Nano-PCM based Photovoltaic thermal (PV/T) system	PV/T; Nanofluid; TES	National University of Malaysia (UKM)	Ph.D. conversion presentation (defense)	2017
4	Evaluation of Nanofluid and Nano-PCM based Photovoltaic thermal (PV/T) system	PV/T; Nanofluid; TES	National University of Malaysia (UKM)	Research Methodology proposal presentation (defense)	2017
5	Grid Connected Photovoltaic Thermal System with Nanofluids	PV/T; Nanofluid;	PECIPTA 2017	PECIPTA Competition 2017	2017
6	Evaluation of Nanofluid and Nano-PCM based Photovoltaic thermal (PV/T) system	PV/T; Nanofluid; TES	National University of Malaysia (UKM)	Colloquium (defense)	2018
7	Using nanomaterial to produce hot water and electricity from solar collectors	PV/T; Nanofluid; TES	National University of Malaysia (UKM)	3-Minute Thesis Competition	2018

8	Performance of Photovoltaic thermal (PV/T) collectors with nanofluids and nano-PCM	PV/T; Nanofluid; TES	National University of Malaysia (UKM)	Ph.D. Viva (defense)	2019
9	Performance prediction of PV & PV/T systems using Artificial Neural Networks (ANN)	PV/T; Nanofluid; TES; ANN	National University of Malaysia (UKM)	Post-Doc Job requirement	2019
10	Testing of photovoltaic system performance	Solar energy; PV;	National University of Malaysia (UKM)	Student advisory	2020
11	Success in Academia and beyond: A list of Things I Learned Along the Way	Academia; Engineering	American University of Iraq – Sulaimani (AUIS)	Keynote for AUIS SPE student chapter	2021
12	Success in Academia and beyond: A list of Things I Learned Along the Way	Academia; Engineering	Sohar University	Keynote for IEEE	2022
13	13 Lessons for Academic Success	Academia; Engineering	American University of Iraq – Sulaimani (AUIS)	Keynote for AUIS Engineering department	2022
14	Artificial Neural Networks (ANN) and its Applications in Solar Energy Technology	Artificial Intelligence; ANN; Solar Energy	American University of Iraq – Sulaimani (AUIS)	Keynote for AUIS Engineering department	2022
15	Artificial Neural Networks (ANN) and its Applications in Solar Energy Technology	Artificial Intelligence; ANN; Solar Energy	Sohar University	Keynote for IEEE	2022
16	An Introduction to Airports, Hangars, and Airplanes	Airports; Hangars; Aircrafts; Engineering	American University of Iraq – Sulaimani (AUIS)	Keynote for AUIS Inception club	2022
17	Safety measures in engineering environments:	Safety; RAMS;	American University of	Keynote for AUIS	2022

	scenarios, protocols, enforcement, and culture	Workplace hazards	Iraq – Sulaimani (AUIS)	Engineering department	
18	Safety measures in engineering environments: enforcement and culture	Safety; RAMS; Workplace hazards	American University of Iraq – Sulaimani (AUIS)	Keynote for AUIS Engineering department	2022
19	The art of research	Academic research	American University of Iraq – Sulaimani (AUIS)	Keynote for AUIS Inception club	2022
20	Research remarks: an outline introduction	Academic research	American University of Iraq – Sulaimani (AUIS)	Keynote for IEEE Oman, Sohar University branch	2022
21	Sustainability through Renewable Energy	Renewable Energy; Sustainability; SDG	American University of Iraq – Sulaimani (AUIS)	Keynote for ACI-AUIS Student Chapter	2023
22	8 rules, 5 lessons, & a story: Dr. Ali's guide to writing	Writing and authorship	American University of Iraq – Sulaimani (AUIS)	Moulakis Library	2023
23	Zero Net Energy Buildings: reality or fantasy	ZNEB; Solar Energy; Renewable Energy	American University of Iraq – Sulaimani (AUIS)	Keynote for AUIS SPE student chapter	2023
24	Pedagogical Best Practices: A view from Engineering	Education; Engineering;	American University of Iraq – Sulaimani (AUIS)	Faculty PD session	2023

Presentations published:

No.	Presentation title	Field	Platform	Date published
1	Photovoltaic Water Pumping System (PVWPS) Oman	PVWPS; HOMER; REPS.OM;	SlideShare	Jul 9, 2019

2	Performance prediction of PV & PV/T systems using Artificial Neural Networks (ANN)	PV/T; Nanofluid; TES; ANN	SlideShare	Jul 15, 2019
3	Photovoltaic thermal (PV/T) collectors with nanofluids and nano-Phase Change Material	PV/T; Nanofluid; TES; ANN	SlideShare	Jul 21, 2019

Articles in Magazines & Newsletters

- Published an article in "Sohar HORIZON " talking about the conference "Natco".
- Published an article titled “Photovoltaic thermal (PV/T) collectors with SiC-Paraffin and SiC-H₂O nanofluid” in “WSSET newsletter”, Volume 12, Issue 4, August 2020.
- Oman Vision 2040: Renewable Energy Program, Newsletter Volume 1, Issue 1, September 2020.
- Oman Vision 2040: Renewable Energy Program, Newsletter Volume 1, Issue 2, December 2020.
- Published an article titled “Academia in the Age of AI: Transformation or Destruction?” in “AUIS ATLAS” student magazine, Volume 1, Issue 3, September 2023.

EDITORIAL POSITIONS

- International Journal of *Renewable Energy and Environmental Sustainability*. EDP Sciences. **Editorial board member**. 30th March 2023. (eISSN: 2493-9439).
- Journal of *Management Science & Engineering Research*. ISSN: 2630- 4953. Bilingual Publishing Co. **Editorial board member**. 29th September 2018 – 28th September 2019.
- International Journal of *Computation and Applied Sciences* IJOCAAS. (ISSN 2399-4509). **Editorial board member**. 15th May 2020.
- *Journal of Mechatronics, Electrical Power, and Vehicular Technology*. ISSN: 2087-3379 (print), ISSN: 2088-6985 (online), DOI Prefix: 10.14203, Accreditation Number (Sinta 2): 1/E/KPT/2015. **Editorial board member** (pending official agreement). Ongoing.

Guest Editorials

- Guest editor of a research topic with *Frontiers in Energy Research* (Q2, Scopus-indexed, and WoS-indexed). The title of the research topic is "Photovoltaic Thermal (PV/T) Collectors: Advances in Design and Implementation".
- Guest editor for sustainability (Q3, Scopus-indexed, and WoS-indexed). The title of the research topic is “Advanced Technologies Applied to the Renewable Energy”.

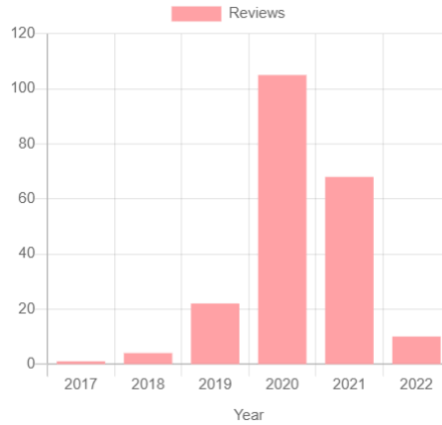
PEER-REVIEW EXPERIENCE

Peer-reviewed papers for Scientific Reports (Springer nature), Renewable & Sustainable Energy Reviews (RSER), Journal of the Taiwan Institute of Chemical Engineers (JTICE), International Journal of Automotive and Mechanical Engineering (IJAME), International Journal of Power Electronics and Drive Systems (IJPEDS), Energy Conversion and Management (ECM), Renewables: Wind, Water, and Solar (RWWS), International Journal of Energy Research (IJER), Journal of Thermal Engineering (JTEN), etc.

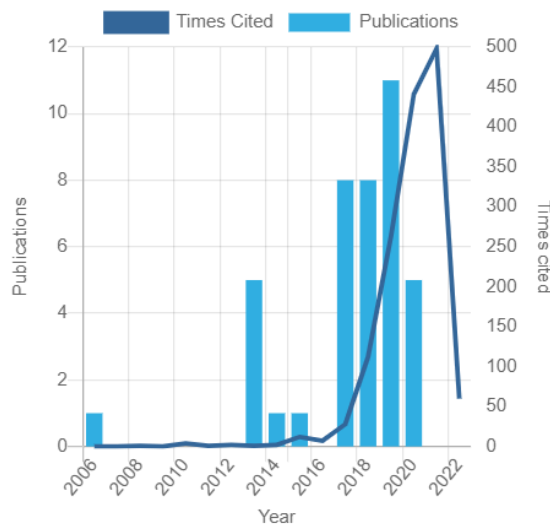
Publons peer-reviewer account: <https://publons.com/researcher/1332811/ali-h-a-alwaeli/>

Review metrics:

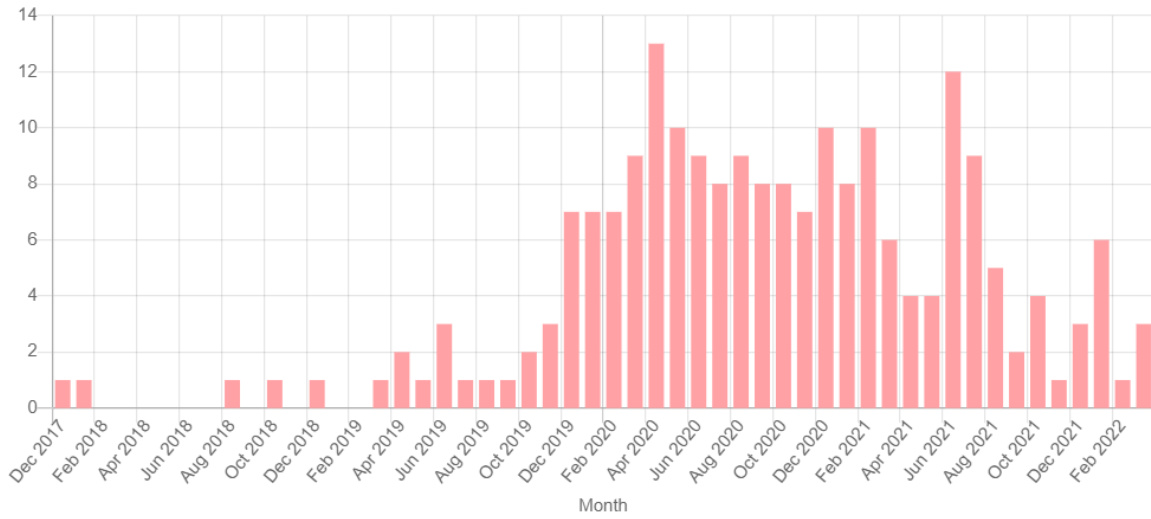
- Verified reviews: **210**
- Verified reviews in the last 12 months: **56**
- Review to publication ratio: **4.8:1**



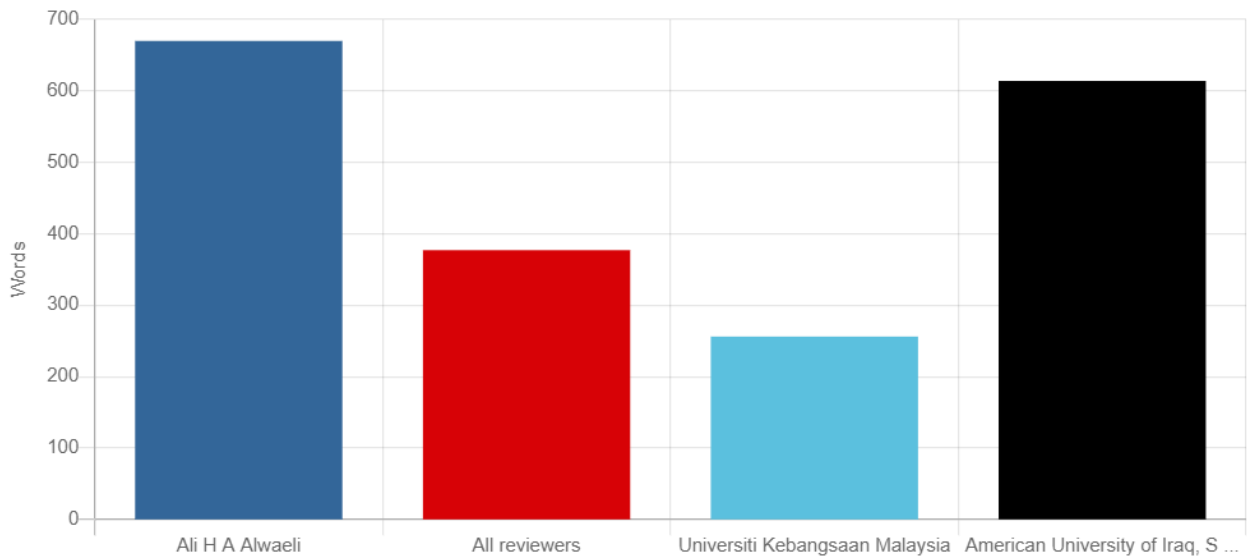
Number of peer reviews in the last four years



Number of publications to times cited according to Publons



Reviews per month



Average review length (words) compared to (all peer reviewers on publons), (Universiti Kebangsaan Malaysia peer reviewers) and (American University of Iraq – Sulaimani peer reviewers).

PROFESSIONAL SOCIETY MEMBERSHIP

SOCIETY	STARTING	END DATE
AIESEC, Team management	2011	March 2012
AIESEC, Team Exchange	2012	July 2012
AIESEC, Vice President of Incoming Exchange	2012	October 2012
IEEE, Member, Oman	2012	2016
IEEE, Member, Malaysia	2016	Still Active
WSSET (World Society of Sustainable Energy Technologies), member	2017	Still Active
IAENG (International Association of Engineers)	2016	Still Active
ISES (International Solar Energy Society)	2020	2021

AWARDS AND HONORS

- Included among “World's top 2% scientists” published by Stanford University (version-6 in 2023).
- Included among “World's top 2% scientists” published by Stanford University (version-4 in 2022).
- Gold Medal at Malaysia Technology Expo (MTE) 2023, for the invention “Smart Hybrid Renewable Energy System: Design and Development of Integrated Hybrid Solar-Darrieus Wind Turbine System” for in-house Power Generation.”.
- 1st prize winner in 3-minute thesis competition 2018.
- 2nd prize winner in sustainability challenge 2017 "Palm oil industry and community sustainability", The national university of Malaysia, 30th of November 2017, for presentation " Nanofluid based photovoltaic thermal (PVT) incorporation in palm oil production process ".
- Silver medal in PECIPTA 2017 "International conference and exhibitions on inventions by institutions of higher learning", Kuala Terengganu, 7-9th of October 2017, for invention "Grid connected Photovoltaic thermal system with nanofluids".
- Awarded the badge of “Excellent review” on Publons.
- Dean Award, Faculty of Engineering, Sohar University.
- The proactive Member in AIESEC Sohar.
- Best high school presenter, Sohar secondary school.
- Best English speaker in school, Al-Khawarizmi private school.

WORKSHOPS

Attended

- “UCO Student Engagement and Active Learning Strategies workshop”, University of Central Oklahoma (UCO), 18th of April 2023.
- “Effective Teaching for Large Workshop”, Texas International Education Consortium (TIEC), 10th of April 2023.
- “Adobe Dreamweaver Workshop”, Sohar university, 2nd of December 2010 to 6th January 2011 (by Dr Nibras Al-Ataar).
- “The demands of youth to develop and change, UNICEF”, Sohar secondary school, September 2011 (by Dr Andy).
- “Understand me so I can Understand you”, Al-Saffa School, September 2011 (by Dr Gareeb Al-Bulushi).
- “Entrepreneurship in a changing business Environment”, Sohar university.
- “Sales and marketing”, Sohar university.
- “Writing project proposals”, Sohar University, 15th of September 2015.
- “Inclusivity in STEM” - TIEC, 2023.
- “Effective teaching for large classes” - TIEC, 2023.
- “Student Engagement and Active Learning Strategies” - UCO, 2023.
- “Case Study Based Learning” - UCO, 2023.
- “Experiential Learning and Alternative Assessments” - UCO, 2023.
- “Caring about C.A.R.E.S - A look at our progress and Future Goals” - AUIS, 2023.

TEACHING STATEMENT

To me, teaching is the art of effectively conveying knowledge to the students and empowering their critical thinking.

I have always been interested in sharing the knowledge and experience that I attain. As an academic, I have given courses, presentations, lectures, workshops and participated in exhibitions and conferences, all of which are experiences that I believe will help me in educating the next generation of scientists and researchers. The skills associated with giving a lecture, a presentation, a workshop or participating in a technology exhibition are crucial and can be very helpful to adopt as a teacher.

Delivering knowledge has always been an important aspect of my work and career so far. I have presented courses in various topics, including energy systems design, introduction to solar energy and courses associated with nanotechnology and machine learning. Moreover, I have given presentations discussing my research findings for the optimum design of photovoltaic water pumping systems in the rural areas of Oman.

I also presented this work in exhibitions such as PECIPTA 2017, for which I won the silver medal. I have also tested my speaking and communication skills in competitions such as the 3-minute thesis (3MT) annual competition at the National University of Malaysia, for which I had to compete against 36 other participants from different fields. In that competition, I was able to win the gold medal (first prize).

I have also given various workshops to under- and post-graduate students. As an undergraduate myself, I gave a workshop to other undergraduates on using HOMER PRO software to design solar water heating systems. As a PhD candidate, I gave a workshop on using the same software to design a standalone PV system feeding a weather station. Moreover, I gave various workshops, to other PhD candidates, on performing the two-step method to prepare nanofluids. I was able to conduct this workshop four more times as a postdoctoral researcher.

As an assistant professor, I taught a variety of engineering courses which included transport phenomena, control systems and automation, circuits, and thermodynamics.

I believe I can teach and integrate my experiences and understanding in research to draw parallels and highlight the importance of obtaining the different tools of engineering. In my research, I had to use different methods to investigate real systems. Numerical modelling and simulations allowed me to obtain the optimum parameters for engineering designs, while experiments allowed me to verify the design and the research hypothesis. Moreover, research allowed me to stay up to date with the latest scientific and technological achievements such as artificial neural networks, nanotechnology, energy storage and renewable energies.

My teaching philosophy is based on the following principles:

- Inspire the students by teaching to the system before teaching to the tools.
- Inviting opinions and allowing creativity and individuality.
- Insight curiosity.
- Having multiple teaching styles.

I believe in my capabilities to teach and mentor engineering students. I believe I am capable of creating and delivering courses, managing a classroom, and supervising senior students and post-graduates.

CONFERENCE AND SEMINAR ATTENDANCE

- “Rationalize in electricity usage”, Sohar-Oman, 24th December 2012 (attendance).
- “GulfEco conference”, Muscat-Oman, 21st – 22nd January 2013 (attendance).
- “The 8th international world future energy summit”, Abu Dhabi-UAE, 19th of January 2015 (attendance).
- “National conference 2018” – by Plus Solar Academy, 24th of March 2018 (attendance).
- Design of Grid Connection Solar System: Inclusive of Site Visit organized by Plus Solar Systems Sdn Bhd with Multimedia University (MMU) and the Institute of Electrical and Electronic Engineering on 9th October 2018 (attendance).

EVENT PARTICIPATION AND ORGANIZATION

(a) Symposiums, conferences, and seminars:

- Oman Solar Energy Symposium (OSES'11), Symposium, Sohar-Oman, 21st May 2011 (**member of organizing committee**).
- Oman Youth to Business Forum - AIESEC Oman, Forum, Muscat-Oman, 6th-7th July 2011 (**participant**).
- Future of Electricity in Oman and Renewable Energy, Seminar, Sohar-Oman, 4th December 2011 (**member of organizing committee**).
- The 7th National Conference - Engage (Natco2012), Conference, Sohar-Oman, 7th-10th February 2012 (**participant**).
- Oman Youth to business forum - AIESEC Oman, Muscat-Oman, 1st March 2012 (**participant**).
- LEAD Conference - AIESEC Oman, Sohar-Oman, 10th-11th March 2012 (**Organizing committee**).
- Integrated international conference 2018 in Putrajaya Marriot Hotel Malaysia, Putrajaya-Malaysia, 13th November 2018 (**participant**).

(b) Colloquiums:

- The 7th annual colloquium in Solar Energy Research Institute (SERI), Faculty of Research at the National University of Malaysia, 27th-28th of November 2019 (**Chairperson of session, Session title: Advanced Solar Thermal Technology & Application**).
- The 8th Solar Energy Research Institute (SERI) UKM Virtual Colloquium 2020 in Solar Energy Research Institute (SERI), Faculty of Research at the National University of Malaysia, 1st-2nd of December 2020 (**Chairperson of session, Session title: Advanced Solar Thermal Technology & Application**).

RESEARCH PRESENTATIONS IN EVENTS

- Oman TV interview, Sohar university Campus 2015 (interview about FURAP project).
- Solar Impulse 2 reception ceremony, Muscat airport, 9th of March 2015 (poster presentation).
- Students week, Sohar University, 22nd of April 2015 (poster presentation).
- Students week, Sultan Qabos University, 26th of April 2015 (poster and prototype presentation).
- Students week, Applied Science College, 28th of April 2015 (poster presentation).
- Power Conservation summit, Sohar University, 30th of April 2015 (poster presentation).
- Energy Conservation Campaign, Sohar University, 7th of December 2015 (presentation).
- Oman TV interview, Sohar University Campus 2016 (interview II about FURAP project).
- PECIPTA 2017, The international conference and exposition on inventions by institutions of higher learning, Kuala Terengganu, 7-9th of October 2017 (Poster and prototype presentation).
- The 5th annual colloquium in Solar Energy Research Institute (SERI), Faculty of Research at the National University of Malaysia, 5th-6th of December 2017 (Oral presentation).
- Resilient Smart Technology Environment and Design 2018 (ReSTED) organized by CRIM & SERI of the National University of Malaysia, Putrajaya Marriot Hotel Malaysia, 14th-15th of November 2018 (Oral presentation).
- Exposure of Industries to Scientists' Achievements (EISA), Participation: Hybrid photovoltaic thermal system solar collector, Sultan Qaboos University (SQU), Muscat-Oman, 2nd – 5th December 2018 (Poster presentation).
- Exposure of Industries to Scientists' Achievements (EISA), Participation: Renewable Energy Power Systems Optimization Tool (REPS.OM), Sultan Qaboos University (SQU), Muscat-Oman, 2nd – 5th December 2018 (Poster presentation).

NATIONAL AND INTERNATIONAL COMPETITIONS

- PECIPTA 2017 "International conference and exhibitions on inventions by institutions of higher learning", Kuala Terengganu, 7-9th of October 2017, for invention "Grid connected Photovoltaic thermal system with nanofluids". Won the Silver medal.
- The sustainability challenge 2017 "Palm Oil Industry and Community Sustainability", Bangi - Selangor, 30th of November 2017, for idea and oral presentation "Nanofluid based photovoltaic thermal (PVT) incorporation in palm oil production process". Won the 2nd place prize for the post graduate category.
- 3MT UKM 2018 "The 3 MINUTE THESIS COMPETITION", Bangi - Selangor, 1st of March 2018, for speech titled "Evaluation of nanofluid and nano-PCM photovoltaic thermal (PV/T) system". Won the semi-final round and advanced to the final.
- Doctors and master's Gold Award 2019 of the National University of Malaysia "ANUGERAH EMAS KEDOKTORAN DAN SARJANA 2019". Nominated to represent Solar Energy Research Institute (SERI) for the PhD cluster and interviewed by the deputy-vice chancellor in August 2019.

- Malaysia Technology Expo (MTE) 2023, for the invention “Smart Hybrid Renewable Energy System: Design and Development of Integrated Hybrid Solar-Darrieus Wind Turbine System” for in-house Power Generation.”. Won the Gold Medal in the Environment and Natural Resources category.

EXPERIENCE IN LABORATORIES AND SYSTEM SETUPS

- Attended, aided, and studied the process of building a renewable energy lab.
- Attended, aided, and studied the process of building a Photovoltaic on the roof of a building.
- Participated and helped in building and installation of a weather station.
- Participated in choosing and installing a water pumping system that is directly coupled to a solar panel.
- Installed a nanofluid production rig considering all safety measures.
- Installed and calibrated thermophysical property testing devices.
- Participated and helped in the planning, organization, and preparation of a Photovoltaic thermal (PVT) laboratory and heat transfer facility.
- Contributed to the design and installation of an indoor photovoltaic test facility.
- Proposed and designed a complete electronics laboratory.
- Prepared a lab manual for fabrication shop laboratory.
- Prepared a lab manual for circuits laboratory.

PROJECTS AND FUNDS

Projects with total amount of fund: \approx **US\$ 403,973** (\approx **OMR 155,529**)

Summary of Research projects and funds:

Project title	Project code	Contribution	Fund amount	Status
Design and Implementation of Photovoltaic Pumping System using Centrifugal Pump and Motor for Rural Area in Oman	FURAP/C2/H K/ENGEE	Principal investigator	US\$ 5,700	Completed successfully
Study and Design of Optimum Control System for a 12 MW Hybrid Power Plant for Masirah Island	ORG/E1/13/011	Research fellow in Sohar University team	US\$ 89,315	Completed successfully
Comparison Study of Photovoltaic Pumping/Diesel Pumping Systems for Rural Areas in Oman	ENGG4801	Principal investigator	US\$ 1,298	Completed successfully
Advanced Fresnel Lens in Solar Thermal System under Tropical Diffused Sky Conditions	TRGS/1/2014/UKM/01/11/4	Graduate Research Assistant	US\$ 49,623.8	Completed successfully
Grid Connected Solar Photovoltaic Thermal (PVT) System with Nano Fluids and Nano PCM	DPP 2018 002	Team leader	US\$ 24,577	Completed successfully
Development of High Efficiency, Low Cost and Non-Toxic All-Sputtered Cu ₂ ZnSnS ₄ (CZTS) Thin Film Solar Cells	MI-2019-011	Post-doctoral researcher	US\$ 24,577	Completed successfully
Design and development of solar adsorption air conditioning system for government buildings towards sustainable energy usage	JKR	Team Member, research fellow	US\$ 98,880	Ongoing – for the next two years
Royale Society project, PCM-Cool, in collaboration with University of Nottingham, UK.	PCM-Cool	Team Member, research fellow	US\$ 100,116.2	Ongoing – for the next three years
Photovoltaic Thermal Collector Heat Pipe System with Organic Nanofluids and Phase Change Materials	DPK	Team Member, research fellow	US\$ 9,887.5	Ongoing – for this year

- FURAP Project, titled “**Design and Implementation of Photovoltaic Pumping System using Centrifugal Pump and Motor for Rural Area in Oman**”, Funded by The Research Council of Oman, Oman 2014. Total Amount: **US\$ 5,700**. Duty: Principal investigator. Project code No. FURAP/C2/HK/ENGEE. The status is: **Completed**. Project timeframe: [start: 1 December 2014, end: 30 August 2015].

For two university semesters, I have worked on the project carrying out the following duties:

1. Developed the research proposal, objectives and methodology.
2. Assembled a team of researcher and assigned roles and functions of each member.
3. Controlled the communication mechanisms between research team, university administration and supervising professor.
4. Led the planning, coordination and implementation of the experimental work and research programme in accordance with the University strategy, policy and procedures and funder requirements.

The aim of the project is to discover the techno-economic criteria and optimum design of a Photovoltaic (PV) water pumping system for irrigation purposes in Oman. The findings were compared to results in the literature of other systems setup in neighbouring countries and across the world. The project concludes that Oman has a promising future in implementation of PV water pumping systems.

- TRC Project, titled “**Study and Design of Optimum Control System for a 12 MW Hybrid Power Plant for Masirah Island**”, Funded by The Research Council of Oman, Oman 2015-2016. Total Amount: **US\$ 89,315**. Duty: Research fellow. Research Grant Agreement No. ORG/E1/13/011. The status is: **Completed**. Project timeframe: [start: June 2015, end: June 2016].

The project was led by Dr. Ahmed Al Busaidi (PI) from Nizwa University, and Dr. Hussein A. Kazem from Sohar University (SU). My contribution to the work was in Sohar University as a research fellow in the form of documentation of work, laboratory management, communications, and optimum system design. The aim of the project is to discover the techno-economic criteria and optimum design of a Photovoltaic (PV) water pumping system for irrigation purposes in Oman. The findings were compared to results in the literature of other systems setup in neighbouring countries and across the world. The project concludes that Oman has a promising future in implementation of PV water pumping systems.

- Final year project for bachelor’s degree in Sohar university, titled “**Comparison Study of Photovoltaic Pumping/Diesel Pumping Systems for Rural Areas in Oman**”, Total amount: **US\$ 1,298**. Duty: Principal investigator. Code No. ENGG4801. The status is: **Completed**. Project timeframe: [start: 1 September 2015, end: June 2016].

For two university semesters, I have worked with my team on this project which aimed to investigating the performance of a PV water pumping system for relatively long period.

In addition, the project aimed to designing a diesel generator pumping system and comparing its results to the PV pumping system, following a technical, economic and environmental criteria in the comparison. Moreover, the element of efficiency enhancement was introduced by adding a tracking system to the PV array. The project was completed on time, as the team successfully produced research papers, participated in conferences and university events. The project concludes that PV is superior to diesel generators in all aspects of comparison and that it can provide immense aid to rural communities that do not have access to the utility grid.

- Trans-disciplinary Research Grant project, titled “**Advanced Fresnel Lens in Solar Thermal System under Tropical Diffused Sky Conditions**”, funded by Kementerian Pendidikan (ministry of higher education). Total amount: **US\$ 49,623.8**. Duty: Graduate Research Assistant. Research Grant Agreement No. TRGS/1/2014/UKM/01/11/4. The status is: **Completed**.
The project was led by prof. Mohd Hafidz Ruslan from Solar Energy Research Institute (SERI). I have worked with my colleague Idris Zulkifl to develop the excel sheet and produce case study results for performance of solar air heater in tropical climate. My main tasks were to develop the performance graphs, write the research paper and get it accepted. The paper was successfully published.
- Research Development Fund Research Group and PTJ (DPP) project, titled “**Grid Connected Solar Photovoltaic Thermal (PVT) System with Nano Fluids and Nano PCM**”, funded by Kementerian Pendidikan (ministry of higher education). Total: **US\$ 24,577**. Duty: Doctoral researcher. Research Grant Agreement No. DPP 2018 002. The status is: **Completed**.
The project was led by Dato. Prof. Kamaruzzaman Sopian for Solar Energy Research Institute (SERI). I have worked closely as a team leader to prepare the proposal and to develop the system and acquire system components.
- Modal Insan project, titled “**Development of High Efficiency, Low Cost and Non-Toxic All-Sputtered Cu₂ZnSnS₄ (CZTS) Thin Film Solar Cells**”, Funded by Universiti Kebangsaan Malaysia. Total amount: **US\$ 24,577**. Duty: Post-doctoral Researcher. Research Grant Agreement No. MI-2019-011. The status is: **Completed**.
Project timeframe: [start: 3 June 2019, will end: 2 June 2020].
For two university semesters, I have worked on the project carrying out the following duties:

 1. Developed mathematical and artificial neural network models. Performed numerical simulation and prepared experimental setups.
 2. Gave talks, presentations, and workshops to students. Also, provided them advice.
 3. Published original and review research papers.
 4. Collaborated with other researchers.

ADVISORY

- Worked as an academic adviser for **LESTARI ENERGY** (lestari energy sdn bhd) company to design, supervise and oversee a nanofluid-based Photovoltaic thermal (PV/T) system with split-flow design. The project was built for **TNBR** (TNB Research Sdn. Bhd.) which is the in-house solution provider for Tenaga Nasional Berhad (TNB) since 1993. Situated in Kajang, Selangor, the Research & Development (R&D) Centre, provides a centralised, one-stop centre for technical solutions and innovation.

My duties were:

1. To provide mechanical and schematic designs
2. Lists of equipment
3. Produce nanofluids
4. Oversee the manufacturing process
5. Carry out a site visit

Project size | 710 Watts

Nanofluid amount | 10 liters

- Worked as an academic adviser to prepare technical advise and 10 liters of silicon carbide nanofluids to **LESTARI ENERGY** (lestari energy sdn bhd) company to sell to **TNBR** (TNB Research Sdn. Bhd.) which is the in-house solution provider for Tenaga Nasional Berhad (TNB) since 1993.

My duties were:

1. Provide follow up technical communications
2. Produce nanofluids

Nanofluid amount | 10 liters

INTERNSHIP HISTORY

- One-month training in MAJAN ELECTRICITY Company, Sohar. 2012
I have trained in the maintenance department of MAJAN ELECTRICITY company, specifically in the preventing maintenance department. I have learned great deal in duties of the maintenance department and safely protocol in substation environments. I have also gained knowledge in electricity distribution systems.
- One-month training in MAJAN ELECTRICITY Company, Sohar. 2014
I have trained in the maintenance department of MAJA ELECTRICITY company, specifically in the preventing maintenance subdivision. I have further discovered information on dealing with electrical substations and safety protocols, beside general knowledge of electrical substations maintenance.
- Two months training in SOHAR ALUMINIUM Company, Sohar. 2014
I have trained in the reduction department of SOHAR ALUMINIUM Company, specifically in the PTA maintenance. I gained general knowledge on aluminium production factories and specific knowledge in function and importance of the Pot Tending Assembly (PTA) machine in the aluminium production process. Furthermore, I gained immense experience in learning safety protocols during operation and breakdown modes.
- One Month training in Sohar University's Renewable Energy Lab in faculty of engineering. I have gained more experience dealing with various renewable energy equipment, starting an engineering project, and utilizing surrounding environment to obtain specific and accurate results.

RESEARCH FELLOWSHIP HISTORY

- **February 2018 – May 2018.** Research Assistant on project sponsored by Kementerian Pendidikan (code: GP-K007209) titled “V-groove solar air collector with changing cover for tropical climate”, Research Grant Agreement No. TRGS/1/2014/UKM/01/11/4. My contribution was code development, data analysis and writing of research paper.
- **June – August 2016.** Research Fellow on The Research Council of Oman sponsored project, "Study and Design of Optimum Control System for a 12 MW Hybrid Power Plant for Masirah Island", Research Grant Agreement No. ORG NTC IE 13 11. My contribution to the work was in the form of documentation of work, laboratory management, communications and literature review work.
- **June – August 2015.** Research Fellow on The Research Council of Oman sponsored project, "Study and Design of Optimum Control System for a 12 MW Hybrid Power Plant for Masirah Island", Research Grant Agreement No. ORG NTC IE 13 11. My contribution to the work was in the form of documentation of work, laboratory management, communications and optimum system design.
- **February 2012 – January 2013.** Research Fellow on The Research Council of Oman sponsored project, "Feasibility Study of Solar Energy (Photovoltaic) Systems in Oman", Research Grant Agreement No. ORG SU EI 11 010. My contribution to the work was in the form of documentation of work, laboratory management, communications, literature review work and language editing.

SOFT SKILLS

Social Skills and Sense of Responsibility

I believe in the power of community through unity, and this can only be achieved through social interactions which lead to more positive reinforcement. Therefore, my social skills, in my opinion, are very good. It helps me, and others to bridge gaps in opinions and intellect. I feel responsible for the people around me in extreme cases, like emergencies. Sometimes it could be easy things, but it is important to give back to the community even in a small measure.

Communication Skills

I communicate very well through English and Arabic languages; my English helps me to reach to people from all over the world and to learn more about different cultures. As an engineer, I believe it is very important to be able to communicate effectively with others to get your point across and I never had a problem doing so. Body language is another aspect of communication that for me shows confidence and leadership.

Information Management and Lifelong Learning

As an engineer, you are prone to meet a huge amount of data on a day to day basis, this could be confusing, it is very important to separate these data and label them, and if needed draw a line which connects them in case they are required in a collaboration of ideas and information. Management here is very important, as a person can only know so much, keeping up with latest technology and design methods is also a key here.

I do all of that and more. Using a data base for reference books and lecture notes to revise them in times of need. Subscribing to Engineering and technological magazines is also important to stay posted. Also, documenting my own work which I believe is a major key in an engineer's career.

Values, Attitudes, Ethics and Professionalism

We as human beings are obligated to better ourselves and each other. As an engineer, I am also obligated to doing so. I always think of ways to help my community and improve the surrounding nature. I do not compromise my values because they lead to my success and because they make me a better human being. My values are respect, honor, dignity, truth, hard work, religion and family. As for my attitude, it goes like this; the cup is always half full and that is a way to get through life. As an engineer, my ethics are as follows: to always make better products, to never cheat, to always follow scientific data, to always follow safety protocols.

Being professional is extremely important, it separates the engineers with experience from the amateurs, and it gives the engineer respect from his peers.

Critical Thinking and Problem-Solving and Scientific Approach

Critical Thinking and problem solving are the two main mechanisms in an engineer's brain, to me this is the most interesting part in engineering and perhaps the only. It derives a train of thinking that could lead to improving life on earth through technology and advancement which are only achievable through Thinking (The main denominator) for this field. These mechanisms must follow a path and that path is the scientific approach which could be considered as a constitution or a way to govern knowledge. I enjoy this part almost more than everything because it brings out the best in me.

Leadership and Teamwork

I have always believed in teamwork and in collaborations to achieve a certain goal, which I have. I worked in a team of researchers (students) for a project which was funded by the Research Council of Oman and it was a great success. But for the team to work, it must be lead and organized which I did too. I became the leader of that team (Principle Investigator) and through my communication skills and other skills I successfully organized tasks for the members and a timetable which led to achieving our goals.

Management and Entrepreneurial Skills

Managing my work has always been a strong suit and it has helped me as an engineer to sustain my level of professionalism throughout my career as a student and I believe it will continue to do so for me in the field (workplace). Building a brand, designing or improving a product, marketing and other skills are all things I am very much aware of. I have participated in the organizing committee in a couple of seminars and a conference by AIESEC Org. In my university (Sohar University, Oman) I and some of my colleagues organized a club and named it (SEC) Sohar Enterprise Club which was intended to help students Entrepreneurial Skills.

Creative and Innovative Skills

Being creative comes from daring, to dare and think outside the box. I believe we are all capable of doing so. I have done so as a student many times throughout my studies to achieve many things. Sometimes it was an assignment and sometimes it was a project on the verge of falling apart. Under pressure human beings become creative to survive. That is way I always put myself under pressure. I have collected many skills to be an innovative person and an outside thinker and that is always achieved through patience and perseverance.

PATENTS AND INTELLECTUAL PROPERTY

PHOTOVOLTAIC THERMAL COLLECTOR WITH NANO-PCM AND NANOFUIDS-F.1565 (UKM IKB/108/2/1565). The patent was granted successfully (Grant number: MY-192878-A).

TV INTERVIEWS

Interview	Interview with TV program "Morning Coffee"
Title	مقابلة تلفزيونية من برنامج قهوة الصباح مع طاقم المضخة المائية المشغلة
Link to Watch	http://youtu.be/AIU1xaG78Hs
Interview	Interview with TV program "Oman TV Live"
Title	طالبة جامعة صحار بالتعاون مع القائمين على مختبر الهندسة بالجامعة يبتكرون نظاما كهربائيا
Link to Watch	https://www.youtube.com/watch?v=bRwP84wJqo8
Interview	Interview with TV program " Al-Mijhar "
Title	المجهر الجمعة 27 مايو 2016م
Link to Watch	https://www.youtube.com/watch?v=Q5gWQIRUhdI
Interview	Interview at the Third Sohar University
Title	الملتقى الوظيفي الثالث بجامعة صحار
Link to Watch	https://www.youtube.com/watch?v=GIUKc7s7ji4
Interview	Interview with Al-Roya Newspaper
Title	الدكتور علي الوائلي لـ"الرؤية": تنوع موارد السلطنة يزيد من فرص الاستثمار في الطاقة الشمسية
Link	https://alroya.om/post/255804/

RENEWABLE ENERGY PROJECTS EXECUTED, TESTED AND/OR EVALUATED

Year	Quantity	Rating	Customer/Application	Customer/Institute
2012	1	1.68 kW	Standalone Solar System.	Sohar University
2012	1	1.4 kW	Grid Connected System.	Sohar University
2012	1	0.28 kW	Solar Tracking System.	Sohar University
2013	1	13 Sensor	Renewable Energy Weather Station.	Sohar University
2014	1	11 Sensor	Renewable Energy Monitoring System.	Sohar University
2014	1	0.9 kW	Solar Water Pumping System.	Sohar University
2016	1	120 W	Standalone photovoltaic thermal (PVT) system with rectangular absorber shape and SiC nanofluids.	The National University of Malaysia (UKM)
2016	1	1.2 kW	Grid-connected photovoltaic thermal (PVT) system with rectangular absorber shape and SiC nanofluids.	The National University of Malaysia (UKM)
2017	1	120 W	Standalone PV.	The National University of Malaysia (UKM)
2017	1	120 W	PVT with cooling tank filled with water and water flows through its cooling Pipes.	The National University of Malaysia (UKM)
2017	1	120 W	PVT with cooling tank filled with PCM and water flows through cooling its Pipes.	The National University of Malaysia (UKM)

2017	1	120 W	PVT with cooling tank filled with nano-PCM and nanofluid flows through its cooling pipes.	The National University of Malaysia (UKM)
2018-2019	1	1.5 kW	PVT system with different configurations (outdoor test facility, rooftop).	The National University of Malaysia (UKM)
2020	6	80 W	Mono- and Poly-crystalline PV modules (indoor test facility).	The National University of Malaysia (UKM)
2020	5	100 W	Different PV types (outdoor test facility, rooftop).	The National University of Malaysia (UKM)
2021	8	0.4 m ²	Different solar thermal collector types (pipe configurations and designs).	American University of Iraq, Sulaimani (AUIS)
2023	1	30 W	PV-assisted Drying Chamber	American University of Iraq, Sulaimani (AUIS)
2023	2	30 W	PV and PV/T with PCM collector	American University of Iraq, Sulaimani (AUIS)

CONTRIBUTIONS AND NOTABLE IDEAS

- Photovoltaic Thermal (PV/T) Collectors with Nanofluids and Nano-PCM.
- Nanofluid Vending Machine.
- Novel evaluation criteria of PV/T collectors.

Current projects on ResearchGate

- Photovoltaic Solar Thermal Technology (PV/T)

The project is followed by 204 and recommended by 158 academic researchers and scientists. Moreover, it was read by more than 3575 times.

- Oman Vision 2040: Renewable Energy Program
- Iraqi vision 2030 in Renewable Energy

UNDERGRADUATE STUDENT'S PROJECTS

- Fabrication shop projects (Fabrication shop – ENGR 231 Fall 2021, AUIS). Entry level students.

8 Flat-plate solar thermal collectors (prototypes).



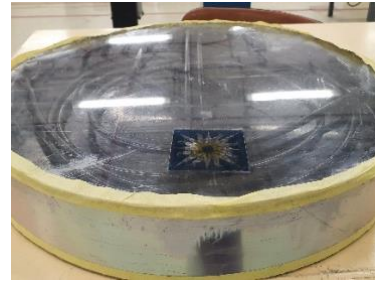
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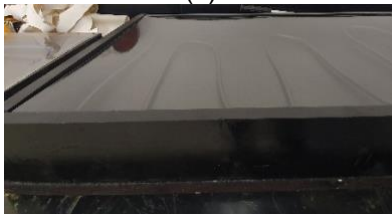
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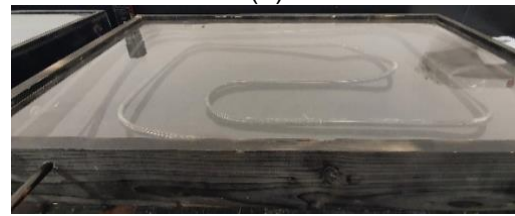
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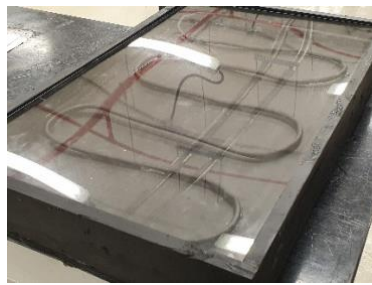
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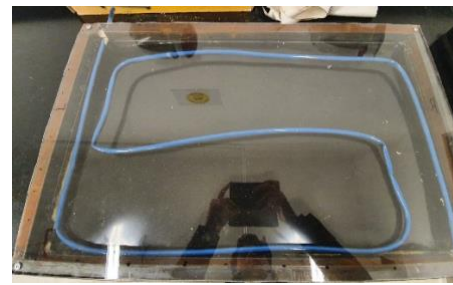
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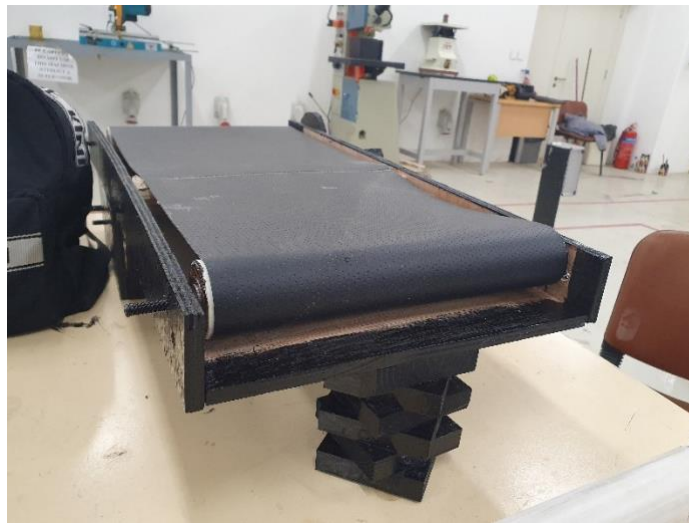
(g)



(h)

- Fabrication shop projects (Fabrication shop – ENGR 231 Winter 2022, AUIS).

A mini-conveyor belt prototype.



REFEREES

- **Prof Dato' Dr Kamaruzzaman Sopian – FASc**

Professor at the Department of Mechanical Engineering

Universiti Teknologi PETRONAS (UTP)

32610, Seri Iskandar, Perak

Malaysia

Telephone: 03-89118572, 03-89118573 Fax: 03-89118574

E-mail: ksopian@utp.edu.my

- **Prof. Miqdam T. Chaichan**

Professor at the Energy and Renewable Energies Technology Research Center (ERETC)

University of Technology

Baghdad, Iraq.

Telephone: +9647700120897

E-mail: miqdam.t.chaichan@uotechnology.edu.iq

- **Dr. Adnan Ibrahim**

Associate Professor at Solar Energy Research Institute (SERI)

National University of Malaysia (UKM)

43600, Bangi, Selangor

Malaysia

Telephone: 03-89118585

E-mail: iadnan@ukm.edu.my