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|  | **WAN AHMAD NAJMI bin WAN MOHAMED****PROFESSOR DR.** |
|  Updated: fEBRUARY 2025 | **JUNE 1975** |
|  | **School of Mechanical Engineering****College of Engineering****Universiti Teknologi MARA****40450 Shah Alam, Selangor, MALAYSIA.**+603 55436277 / +6012 2981756wanajmi@uitm.edu.my Web of Science ResearcherID : [K-7642-2019](https://publons.com/researcher/K-7642-2019/)https://orcid.org/0009-0003-8430-1512https://www.scopus.com/authid/detail.uri?authorId=49561535400https:// https://scholar.google.com.my/citations?user=IPmuYzAAAAAJ&hl=en**Chief-Editor**, Journal of Applied Engineering Design and Simulation (JAEDS) – *7 issues, 41 articles, 54 citations, H-index 4 (Indexed by MyCite)***Head of ICT committee**, Malaysian Association of Hydrogen Energy**Head** of Efficient Energy Conversion Technologies (EECT) Tier 4 Research Group UiTM**h-index/citations: WoS 17/816; Scopus 19/1189; Google Scholar 20/1473** |

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|  | EducationUniversiti Teknologi MARA, MALAYSIA2012 - PhD. in Mechanical Engineering (Thermofluids and Energy)“SOLID-STATE THERMAL ANALYSIS OF AIR-COOLED POLYMER ELECTROLYTE MEMBRANE FUEL CELLS WITH PREDICTIVE EMPIRICAL PROFILING”Universiti Teknologi Malaysia, MALAYSIA2002 - MEng. in Mechanical Engineering (Energy Systems)Universiti Teknologi Malaysia, MALAYSIA1998 - BEng. (Hons.) in Mechanical EngineeringCURRENT ACADEMIC POSITIONProfessorSchool of Mechanical Engineering, College of Engineering, Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, MalaysiaAREAS OF INTEREST* Hydrogen Fuel Cells
* Fuel Cell Vehicle Power Train
* Hydrogen Refueling Stations
* Nanofluid Coolants
* Industrial Waste Heat Recovery
* Thermoelectric Generators
* Biomass Combustion

RESEARCH HIGHLIGHTS* KONSORTIUM KECEMERLANGAN PENYELIDIKAN 2021-2023 (PI of sub-group): A high efficiency fuel cell energy recovery system for simultaneous electrical power generation and hydrogen preheating
* PRGS 2019 – 2021 (PI): A Modular Thermoelectric Generator System for Effective Energy Recovery of Industrial Waste Heat
* FRGS 2014 (PI): Effects of Energy Recovery Methods to the Efficiency of a Hydrogen Propulsion System
* LRGS 2014 (sub-group leader): Application of Nanofluid as Cooling Medium in a Proton Exchange Membrane Fuel Cell System for Vehicles
* FRGS 2012 (PI): Numerical Modeling and Characterization of Dynamic Responses for a Hydrogen Fuel Cell System in Vehicles

Intelectual property1. Copyright *CRLY2021W04460: Thermoelectric generator module design for combined heat and power from industrial waste heat*
2. Copyright CRLY2024W04100: Integrated Heat Recovery Module

pOST-GRADUATE SUPERVISION (PhD)1. Irnie Azni bt. Zakaria (Main SV: PhD. in Mechanical Eng) 2013-2016. *Nanofluid coolants for PEM fuel cell thermal management –* ANUGERAH PENYELIDIK CEMERLANG (EXCELLENT RESEARCHER AWARD) UiTM2. Suhadiyana Hanapi (Main SV: PhD. in Mechanical Eng) 2013-2017. *Energy efficiency optimization of a Fuel Cell vehicle* 3. Nur Faranini Zamri (Main SV: PhD. in Mechanical Eng) 2020- 2025*Industrial waste heat recovery using thermoelectric generator modules*4. Muhammad Hadrami bin Hamdan (Main SV: PhD. in Mechanical Eng) 2021- present*Integrated heat exchanger design for combined power and heating from low grade fuel cell waste heat*5. Siti Umrah binti Zainal (co-SV: PhD. In Mechanical Eng) 2023 – present*Influence of lattice design on carbon capture performance of direct air capture (DAC) system*6. Tajul Farhan bin Tamimuddin (Main SV: PhD. in Mechanical Engineering) 2023 – present*Techno economics of Solar PV Hydrogen Refueling Station*POST-GRADUATE SUPERVISION (Masters)1. Khairul Imran b. Sainan (Main SV: MSc. in Mechanical Eng.) 2009-2012. *Transparent hydrogen fuel cell design for water management* 2. **Siti Fatimah Abdul Talib (Main SV: MSc in Mechanical Eng) 2014-2018.** *Development of fuel cell cooling system using nanofluid coolants* 3. **Muhammad Saufi b. Sulaiman (Main SV: MSc in Mechanical Eng) 2015- 2019.**  *Fuel cell waste heat recovery using thermoelectric generators* 4. **Nur Hidayah bt. Mohd. Razif (Co-SV: MSc in Mechanical Eng) 2015 – 2017.** *Heat transfer analysis for ammonia-water mixture heat exchanger of an energy recovery system* **5. Saifuddin Khalid (Co-SV: MSc in Mechanical Eng) 2018-2020.** *Al2O3–SiO2 hybrid nanofluids for advanced PEM fuel cell thermal management* *6.* **Ahmad Syafiq Haqim (Main SV: MSc in Mechanical Eng) 2020 - 2023.** *Comparative evaluation of thermodynamic and thermoeconomic of steam superheaters*7. **Muhammad Amirul Nadim Bin Zarizi** **(Co-SV: MSc in Mechanical Eng) 2021-present.** *Thermoelectric generator in cooling channels of a PEM fuel cell*LIST OF PUBLICATIONS(updated JANUARY 2025) |

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| **JOURNALS** **(Q1/Q2 WOS INDEXED)**1. M. Hadrami Hamdan, WANW Mohamed, M. A. Aminudin, S. K. Kamarudin, I. A. Zakaria, B. Singh, *An Integrated Heat Recovery System Design for a Fuel Cell Buggy with Hydrogen Preheating and Thermoelectric Generator*, **Fuel Cells (**Special Issue 2025: ICFCHT-SFCHT 2023). **IF 2.3 Q2**
2. Saifuddin Khalid, Irnie Azlin Zakaria, Wan Azmi Wan Hamzah, Johari, M. N. I., & WANW Mohamed, *Improving heat transfer through alumina-silica nanoparticles suspension: an experimental study on a single cooling plate.* **Experimental Heat Transfer**, 2024, 1–21. **IF 3.5 Q2**
3. Irnie Azlin Zakaria, WANW Mohamed, Nurul Huda Azid, Mohd Azeem Suhaimi, Wan Azmi Wan Hamzah, *Heat transfer and electrical discharge of hybrid nanofluid coolants in a fuel cell cooling channel application,* **Applied Thermal Engineering** 210, 2022, 118369. **IF 5.295 Q1**
4. Mohamad Noor Izwan Johari, Irnie Azlin Zakaria, Wan Azmi Wan Hamzah, WANW Mohamed, *Green bio glycol Al2O3-SiO2 hybrid nanofluids for PEMFC: The thermal-electrical-hydraulic perspectives*, **International Communications in Heat and Mass Transfer** 131, 2022, 105870. **IF 5.68 Q1**
5. Baljit Singh, WANW Mohamed, MN Fatin Hamani, KNA Sofiya, *Enhancement of low-grade waste heat recovery from a fuel cell using a thermoelectric generator module with swirl flows*, **Energy** 236, 2021, 121521. **IF 7.147 Q1**
6. WANW Mohamed, Baljit Singh, Muhammad Faizal Mohamad, AM Aizuwan, Mohd Zubair Abdul Basit, *Effects of fuel cell vehicle waste heat temperatures and cruising speeds on the outputs of a thermoelectric generator recovery module*, **Int. Journal of Hydrogen Energy** 46(50), 2021, 25634-25649. **IF 5.816 Q1**
7. Saifuddin Khalid, Irnie Zakaria, Wan Azmi Wan Hamzah, WANW Mohamed, *Thermal–electrical–hydraulic properties of Al2O3–SiO2 hybrid nanofluids for advanced PEM fuel cell thermal management*, **Journal of Thermal Analysis and Calorimetry** 143 (2),2020, 1555-567. **IF 4.626 Q1**
8. Irnie Azlin Zakaria, WANW Mohamed, Mohd Baihaqi Zailan, Wan Azmi Wan Hamzah*, Experimental analysis of SiO2-Distilled water nanofluids in a Polymer Electrolyte Membrane fuel cell parallel channel cooling plate*, **Int. J of Hydrogen Energy** 44 (2019): 25850-25862. **IF 5.816 Q1**
9. M. Saufi Sulaiman, Baljit Singh, WANW Mohamed, *Experimental and theoretical study of thermoelectric generator waste heat recovery model for an ultra-low temperature PEM fuel cell powered vehicle*, **Energy**, 179 (2019), pp. 628-646. **IF 7.147 Q1**
10. Irnie Azlin Zakaria, Wan Azmi Wan Hamzah, Rizalman Mamat, Aman Mohd Ihsan Mamat, Wan Ramli Wan Daud and Wan Ahmad Najmi bin Wan Mohamed*, Thermo-electrical performance of PEM fuel cell using Al2O3 nanofluids,* **Int. Journal of Heat and Mass Transfer** 119 (2018) 460–471 **IF 5.584 Q1**
11. Wan Ahmad Najmi bin Wan Mohamed, Siti Fatimah Abu Talib, Irnie Azlin Zakaria, Aman Mohd Ihsan Mamat, Wan Ramli Wan Daud, *Effect of Dynamic Load on the Temperature Profiles and Cooling Response Time of a Proton Exchange Membrane Fuel Cell*, **Journal of the Energy Institute** 91(3) (2018) 349-357. **IF 5.7 Q2**
12. Wan Ahmad Najmi bin Wan Mohamed and M. Haziq M. Kamil, *Hydrogen preheating through waste heat recovery of an open-cathode PEM fuel cell leading to power output*, **Energy Conversion and Management** 09/2016; 124:543-555. **IF 9.709 Q1**
13. Irnie Azlin Zakaria, Wan Azmi Wan Hamzah, Rizalman Mamat, Aman Mohd Ihsan Mamat and Wan Ahmad Najmi bin Wan Mohamed, *Thermal Analysis of Al2O3-Water Ethylene Glycol Mixture Nanofluid for Single PEM Fuel Cell Cooling Plate: An Experimental Study*, **Int. J. Hydrogen Energy** 41 (2016), pp. 5096-5112. **IF 5.816 Q1**
14. Wan Ahmad Najmi bin Wan Mohamed and Rahim Atan, *Experimental Thermal Analysis on Air Cooling for Closed Cathode Polymer Electrolyte Membrane Fuel Cells*, **Int. J. Hydrogen Energy** 40 (33) (2015) pp. 10605-10626. **IF 5.816 Q1**
15. Irnie Azlin Zakaria, Wan Azmi Wan Husin, Rizalman Mamat, G. Najafi and Wan Ahmad Najmi bin Wan Mohamed, *Experimental investigation of thermal conductivity and electrical conductivity of Al2O3 Nanofluid in Water-Ethylene Glycol Mixture for Proton Exchange Membrane Fuel Cell Application*, **International Communications in Heat and Mass Transfer** 61 (2015) pp. 61-68. **IF 5.683 Q1**

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2. A.S. Haqim, W.A.N.W. Mohamed, A.S. Tijani, *Performance degradation analysis of a medium pressure superheater due to tube deactivation*, **Journal of Mechanical Engineering and Sciences**, Volume 17, Issue 2, 2023, 9443 – 9452. **WoS ESCI IF 1.1.**
3. MAN Zarizi, IA Zakaria, MNI Johari, WAN Wan Mohamed, *Thermo-Electrical Behavior of Al2O3 and SiO2 Nanofluids in a Proton-Exchange Membrane Fuel Cell (PEMFC) Cooling Channel*. **Pertanika Journal of Science & Technology** 30 (2), 2022. **WoS ESCI IF 0.6.**
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5. MS Sulaiman, WAN W Mohamed, B Singh and MF Ghazali, *Validation of a Waste Heat Recovery Model for a 1kW PEM Fuel Cell using Thermoelectric Generator,* **IOP Conference Series: Materials Science and Engineering** 226 (1), 2017, 012148 **WoS ESCI**.
6. S Hanapi, AS Tijani, AHA Rahim, Wan Ahmad Najmi Wan Mohamed, [*Exergy Efficiency Profile of A 1kW Open Cathode Fuel Cell with Pressure and Temperature Variations*](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=q75ne3AAAAAJ&citation_for_view=q75ne3AAAAAJ:J_g5lzvAfSwC), **Energy Procedia** 79, 2015, 82-89 **WoS ESCI**.
7. I Zakaria, Wan Ahmad Najmi Wan Mohamed, Aman Mohd Ihsan Mamat, R Saidur, WH Azmi, R Mamat, [*Thermal Analysis of Heat Transfer Enhancement and Fluid Flow for Low Concentration of Al 2 O 3 Water-Ethylene Glycol Mixture Nanofluid in a Single PEMFC Cooling Plate*](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=q75ne3AAAAAJ&citation_for_view=q75ne3AAAAAJ:ns9cj8rnVeAC)*,* **Energy Procedia** 79, 2015, 259-264 **WoS ESCI**.
8. S Hanapi, AS Tijani, AHA Rahim, Wan Ahmad Najmi Wan Mohamed, [*Comparison of A Prototype PEM Fuel Cell Powertrain Power Demand and Hydrogen Consumption Based on Inertia Dynamometer and On-Road Tests*](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=q75ne3AAAAAJ&citation_for_view=q75ne3AAAAAJ:RGFaLdJalmkC), **Energy Procedia** 79, 2015, 73-81 **WoS ESCI.**
9. IA Zakaria, Wan Ahmad Najmi Wan Mohamed, AMIB Mamat, R Saidur, WH Azmi, R Mamat, [*Experimental Investigation of Al 2 O 3-Water Ethylene Glycol Mixture Nanofluid Thermal Behaviour in a Single Cooling Plate for PEM Fuel Cell Application*](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=q75ne3AAAAAJ&cstart=20&citation_for_view=q75ne3AAAAAJ:O3NaXMp0MMsC)*,* **Energy Procedia** 79, 2015, 252-258 **WoS ESCI**.
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11. IA Zakaria, WANW Mohamed, AMI Mamat, KI Sainan, SF Abu Talib, *Thermal Performance of Al2O3 In Water - Ethylene Glycol Nanofluid Mixture As Cooling Medium In Mini Channel*, **AIP Conference Proceedings** 1674, 020014, 2015 **WoS ESCI**.
12. N.H. Mohd Razif, A.M.I Mamat, I. Lias, WANW Mohamed, *Thermophysical Properties Analysis for Ammonia-Water Mixture of an Organic Rankine Cycle*, **Jurnal Teknologi** 75(8), 2015 **WoS ESCI**.
13. Mohamad Tzhaquib Fadhlullah Thafarallah, Wan Ahmad Najmi Wan Mohamed and Nor Amalina Nordin, *High Resolution Micro-Computed Tomography Imaging and Modelling of Porous Copper Sample*, **Proceedings – 4th IEEE International Conference on Control System, Computing and Engineering,** ICCSCE 2014. 7072764, pp. 466-471 **WoS ESCI**.
14. Irnie Azlin Zakaria, Wan Ahmad Najmi Wan Mohamed, Muhammad Zuhaili Razali and Mohd Shahril Ahmad Khiar, *Effect of Temperature towards Electrical Conductivities of Low Concentration of AL2O3 Nanofluid in Electrically Active Cooling System,* **Proceedings – 4th IEEE International Conference on Control System, Computing and Engineering**, ICCSCE 2014, 7072760 pp. 444-448 **WoS ESCI**.
15. Wan Ahmad Najmi Wan Mohamed, *Cooling channels design analysis with chaotic laminar trajectory for closed cathode air-cooled PEM fuel cells using non-reacting numerical approach*, **IOP Conf Series: Material Science and Engineering** 88, 012065, 7th Int. Conf. on Cooling and Heating Technologies (ICCHT) 2014 **WoS ESCI**.
16. Wan Ahmad Najmi Wan Mohamed, Irnie Azlin Zakaria, Zeno Michael and Aman Mohd Ihsan Mamat, *Thermal and Electrical Experimental Characterization of Ethylene Glycol and Water Mixture Nanofluids for a 400W Proton Exchange Membrane Fuel Cell,* **Proceedings – 4th IEEE International Conference on Control System, Computing and Engineering**, ICCSCE 2014, 7072797, pp. 641-646 **WoS ESCI**.
17. Irnie Azlin Zakaria, Muhammad Rizuwan bin Mustaffa, Aman Mohd Ihsan bin Mamat and Wan Ahmad Najmi Wan Mohamed, *Steady-State Potential Energy Recovery Modeling of an Open Cathode PEM Fuel Vehicle*, **Applied Mechanics and Materials**, vol 465-466 (2014) pp. 114-119.
18. Muhammad Rizuwan bin Mustaffa and Wan Ahmad Najmi bin Wan Mohamed, *Testing of Lightweight Fuel Cell Vehicles System at Low Speeds with Energy Efficiency Analysis*, **IOP Conf. Series: Material Science and Engineering** 53(1), 012040, 2013 **WoS ESCI**.
19. Muhammad Rizuwan bin Mustaffa and Wan Ahmad Najmi bin Wan Mohamed, *Analytical Approach to Predict Hydrogen Consumption of a Lightweight Fuel Cell Vehicle*, **Proceedings – 2012 IEEE International Conference on Control System, Computing and Engineering**, ICCSCE 2012, 6487195, pp. 489-494 **WoS ESCI**.
20. Wan Ahmad Najmi bin Wan Mohamed and Yiap Tea Sin, *Industrial and academic collaboration strategies on hydrogen fuel cell technology development in Malaysia*, **Procedia-Social and Behavioral Sciences** 90, 2013, pp. 878-888 **WoS ESCI**.
21. Wan Ahmad Najmi bin Wan Mohamed and R. Atan, *Analysis of Stack Heating on the Thermal and Electrical Resistance Characteristics of Polymer Electrolyte Membrane Fuel Cell*, **International Journal of Automotive and Mechanical Engineering (IJAME)**, vol. 5, pp. 648-659, 2012. **WoS ESCI**
22. Wan Ahmad Najmi bin Wan Mohamed and R. Atan, *Thermal and Coolant Flow Computational Analysis of Cooling Channels for Air-Cooled PEM Fuel Cell*, **Applied Mechanics and Materials: Mechanical and Aerospace Engineering**, vol 110-116, pp. 2746-2753, 2012.
23. Wan Ahmad Najmi bin Wan Mohamed and R. Atan, *Temperature profiles of an air-cooled PEM fuel cell stack under active and passive cooling operation*, **Procedia Engineering**, vol 41, pp 1735-1742, 2012 **WoS ESCI**.
24. K.I. Sainan, Wan Ahmad Najmi b. Wan Mohamed and R. Atan, *Computational Model Analysis on a Bipolar Plate Flow Field Design of a PEM Fuel Cell,* 2011 **5th International Power Engineering and Optimization Conference, PEOCO 2011-Program and Abstracts**, 5970420, pp. 133-138 **WoS ESCI**.

**JOURNALS** **(SCOPUS INDEXED)**1. WANW Mohamed, NF Zamri, MH Hamdan, H Shah, NHM Hanim, *Performance of Single Cell and Double Stacked Thermoelectric Generator Modules for Low Temperature Waste Heat Recovery*, **IOP Conference Series: Earth and Environmental Science** 1261 (1), 012007, 2023.
2. MA Nadim, IA Zakaria, B Singh, WANW Mohamed, R Bahsan, *Al2O3 and SiO2 Nanofluids Performance in Thermoelectric Generator*, **Journal of Advanced Research in Fluid Mechanics and Thermal Sciences**, 107(1), 2023, 45–57.
3. MS Idris, IA Zakaria, PNA Nazari, WAN Wan Mohamed, WA Wan Hamzah, *Performance of hybrid AI2O3: SiO2 W: EG in PEM fuel cell distributor plate*, **Journal of Mechanical Engineering** 20 (3), 335-354, 2023.
4. NF Zamri, MH Hamdan, SNA Anuar, WAN W Mohamed, MF Remeli, *Performance of A Plate-Finned Thermoelectric Generator (TEG) Module for Industrial Waste Heat Recovery*, **Journal of Mechanical Engineering** 19 (3), 2022, 257-272.
5. MS Idris, IA Zakaria, WAW Hamzah, WANW Mohamed, *The Characteristics of Hybrid Al2O3: SiO2 Nanofluids in Cooling Plate of PEMFC*, **Journal of Advanced Research in Fluid Mechanics and Thermal Sciences** 88 (2021)
6. MSM Yatim, IA Zakaria, MF Roslan, WANW Mohamed, MF Mohamad, *Heat Transfer and Pressure Drop Characteristics of Hybrid Al2O3-SiO2*, **Journal of Mechanical Engineering** 18 (2), 2021, 145-159.
7. Amira Shahirah Malek Amir Azmin, Irnie Azlin Zakaria, Saifuddin Khalid, Wan Azmi Wan Hamzah, W.A.N.W. Mohamed, *Numerical Analysis of Aluminium Oxide and Silicon Dioxide Nanofluids in Serpentine Cooling Plate of PEMFC*, **Journal of Advanced Research in Fluid Mechanics and Thermal Sciences** 72, Issue 1 (2020) 67-79.
8. Saifuddin Khalid, Irnie Azlin Zakaria, Wan Ahmad Najmi Wan Mohamed, *Comparative analysis of thermophysical properties of Al2O3 and SiO2 nanofluids,* **Journal of Mechanical Engineering** Vol SI 8(1), 153-163, 2019.
9. IA Zakaria, WANW Mohamed, WAW Hamzah, *Numerical analysis of SiO2 nanofluid performance in serpentine PEMFC cooling plate*, **International Journal of Engineering and Technology (UAE)** 7 (4), 2018, 170-174.
10. IA Zakaria, WANW Mohamed, AMI Mamat, KI Sainan, MRM Nawi, *Numerical analysis of Al2O3 nanofluids in serpentine cooling plate of PEM fuel cell*, **Journal of Mechanical Engineering** 5 (Special issue 1), 2018, 1-13.
11. Shahrin Zikri Shahrizman, KI Sainan, AS Tijani, IA Zakaria, WANW Mohamed, S Hanapi, AHA Rahim, *Study of Multiple 2:1 and Single 1:1 Inlet/Outlet Ratio for Serpentine PEMFC Performance*, **Journal of Mechanical Engineering** 5 (Special issue 6), 2018, 1-9.
12. N. H Mohd Razif, N. H Kamaruddin, A. M. I Bin Mamat and W. A. N. W Mohamed, *Characteristic of Orc Finned - Tube Condenser Design Using Ammonia-Water Mixture,* **ARPN Journal of Engineering and Applied Sciences** *Vol. 11, No. 12, June 2016.*
13. M Zuhaili Razali, Abd Rahim Abdullah, Wan Ahmad Najmi Wan Mohamed, M Shahril Ahmad Khiar, *Hydrogen inlet pressures parameter analysis of proton exchange membrane fuel cell (PEMFC) using spectrogram*, **ARPN Journal of Engineering and Applied Sciences** 11 (6), 2016, pp. 3875-3882.
14. Irnie Zakaria, Z. Michael, W.A.N.W. Mohamed, A.M.I. Mamat, W.H. Azmi, R. Mamat and R. Saidur, [*A Review of Nanofluid Adoption in Polymer Electrolyte Membrane (PEM) Fuel Cells as an Alternative Coolant*](http://jmes.ump.edu.my/images/Volume%208%20June%202015/10_Zakaria%20et%20al.pdf), **J. of Mechanical Engineering and Sciences** 8 (2015), pp. 1351-1366.
15. S. Hanapi, M.H.A Mohd Fakharuzi, A.H. Abdol Rahim, AlHassan Salami Tijani, K.I. Sainan and W.A.N. Wan Mohamed, [*Effect of Gear Ratio on the DC Motor Efficiency of a Mini-Fuel-Cell Vehicle Cruising at Constant Speeds*](http://jmes.ump.edu.my/images/Volume%208%20June%202015/20_Hanapi%20et%20al.pdf), **J. of Mechanical Engineering and Sciences** 8 (2015), pp. 1460-1471.
16. Wan Ahmad Najmi Wan Mohamed and Rahim Atan, *Experimental Cooling Mode Variation of an Air-Cooled PEM Fuel Cell using Second-Order Thermal Analysis*, **Journal of Mechanical Engineering** 10 (2), 2014, pp. 55-78.
17. Suhadiyana H., M. A. A. Zambri, M. H. A. Mohd Fakharuzi, A. H. Rahim, K. I. Sainan, and Wan Ahmad Najmi Wan Mohamed, *Data acquisition system for on-track performance analysis of a mini fuel cell vehicle*, **IEEE 3rd IET International Conference on Clean Energy and Technology** (CEAT 2014). DOI:[10.1049/cp.2014.1501](http://dx.doi.org/10.1049/cp.2014.1501)
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21. Aman M.I Bin Mamat and Wan Ahmad Najmi Wan Mohamed, [*Thermal Analysis of Heat Recovery Unit to Recover Exhaust Energy using an Organic Rankine Cycle*](https://www.researchgate.net/publication/257308232_Thermal_Analysis_of_Heat_Recovery_Unit_to_Recover_Exhaust_Energy_using_an_Organic_Rankine_Cycle?ev=prf_pub), **Applied Mechanics and Materials: Advances in Manufacturing and Mechanical Engineering** Vol. 393, 2013, pp. 781-786.
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24. Wan Ahmad Najmi b. Wan Mohamed and R. Atan, *Computational Analysis on Thermal Performance and Coolant Flow of an Air-Cooled PEM Fuel Cell*, **Journal of Mechanical Engineering UiTM**, Vol. 7 (2), 2010.

**JOURNALS (MYCITE OR NON-INDEXED)**1. Tajul Farhan Tamimuddin, WANW Mohamed, MFA Yaziz *An Overview on the Design, Operation and Levelized Costs of Hydrogen Refueling Stations for Fuel Cell Electric Vehicles*, **Journal of Applied Engineering Design and Simulation** 4 (1), 2024, 21-34. <https://doi.org/10.24191/jaeds.v4i1.76>
2. MH Hamdan, NF Zamri, WANW Mohamed, MF Remeli, NHM Hanim, HJMF Shah, *Performance of thermoelectric generator system to generate electrical output from a low-grade waste heat temperature under linear and swirling waste heat streams,* ESTEEM Academic Journal 20, 2024, 100-116. [10.24191/esteem.v20iSeptember.1865.g1819](https://doi.org/10.24191/esteem.v20iSeptember.1865.g1819).
3. WAN Wan Mohamed, MA Suhaimi, IA Zakaria, WA Wan Hamzah, *Electro-Thermal characteristics of hybrid TiO2-SiO2 nanofluid coolants in an electrically active system,* **Scientific Research Journal** 18 (1), 2021, 209-225.
4. I Zakaria, Wan Ahmad Najmi Wan Mohamed, WH Azmi, [*Thermal Analysis on Heat Transfer Enhancement and Fluid Flow for Al2O3 Water-Ethylene Glycol Nanofluid in Single PEMFC Mini Channel*](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=q75ne3AAAAAJ&cstart=20&citation_for_view=q75ne3AAAAAJ:BqipwSGYUEgC)*,* **International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering** 9 (9), 2015, pp. 1496-1501, World Academy of Science, Engineering and Technology.
5. S Hanapi, AS Tijani, Wan Ahmad Najmi Wan Mohamed*,* [*Influence of Driving Strategy on Power and Fuel Consumption of Lightweight PEM Fuel Cell Vehicle Powertrain*](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=q75ne3AAAAAJ&cstart=20&citation_for_view=q75ne3AAAAAJ:NaGl4SEjCO4C), **International Journal of Energy and Power Engineering Vol:10, No:1, 2016**, 12-18, World Academy of Science, Engineering and Technology.
6. Irnie Azlin Zakaria, Zeno Michael and Wan Ahmad Najmi Wan Mohamed, *Nanofluid as Cooling Medium In Polymer Electrolyte Membrane (PEM) Fuel Cell: A Study On Potentials And Possibilities,* **Advanced Materials Research** Vol. 1109 (2015) pp 319-323.
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8. Muhammad Zuhaili Bin Razali, Abdul Rahim Bin Abdullah, Wan Ahmad Najmi Wan Mohamed and Mohd Shahril Ahmad Khiar, *Effect of Hydrogen Inlet Pressure Analysis on open Voltage of Proton Exchange Membrane (PEM) Fuel cell by using Periodogram*, **Australian J. Basic & Applied Sciences**, 9 (12): 86-92, 2015.
9. Wan Ahmad Najmi B. Wan Mohamed and Nik Rosli Abdullah, *Combustion Characteristics of Palm Shells and Palm Fibres using an Inclined Grate Combustor*, **Journal of Mechanical Engineering UiTM**, Vol.5 (1), 2008
10. Wan Ahmad Najmi B. Wan Mohamed, *Emission Characteristics of Palm Oil Shell in a Cascading Hearth Staged Combustor*, **Journal of Mechanical Engineering UiTM**, Vol.1 (1), 2004.
11. Wan Ahmad Najmi B. Wan Mohamed and Farid Nasir Ani, *The Effect of Fuel Feed Rate on Temperature Profiles of a Cascading Hearth with Secondary Swirl Combustor*, **Jurnal Mekanikal UTM**, Vol 13, pp. 75-88, 2002.

**conference papers (non-indexed proceedings)**1. Suhadiyana Hanapi, Firdaus Othman and Wan Ahmad Najmi Wan Mohamed, *Efficiency of electric motor on PEM fuel cell urban car*, **Proc. Int. Conf. on Applied Sciences & Industrial Technology** (ICASIT) 2015.
2. Siti Fatimah Abu Talib, Irnie Azlin Zakaria, Wan Azmi Wan Hamzah, Wan Ahmad Najmi Wan Mohamed, *Experimental Investigation of Viscosity of Silicon Dioxide (SiO2) in Water Ethylene Glycol Base Fluids for Proton Exchange Membrane Application*, **Int. Conf. on Applied Sciences & Industrial Technology** (ICASIT) 2015.
3. Irnie Azlin Zakaria , Wan Ahmad Najmi Wan Mohamed, Aman Mohd Ihsan Mamat, Khairul Imran Sainan and Siti Fatimah Abu Talib, *Thermal Performance of Al2O3 In Water – Ethylene Glycol Nanofluid Mixture As Cooling Medium in Mini Channel*, **Int. Conf. on Applied Sciences & Industrial Technology** (ICASIT) 2015.
4. Aman Mohd Ihsan Mamat, Wan Ahmad Najmi Wan Mohamed, Rosnadiah Bahsan, Zeno Micheal, Nazri Mohamad, Mohd Hanif Mat@Muhammad, *Malaysia Assessment of Complex Engineering Problem in Thermal Engineering Course*, **6th IEEE International Conference on Engineering Education** (ICEED) 2014 Kuala Lumpur.
5. Irnie Azlin Zakaria, Zeno Michael and Wan Ahmad Najmi Wan Mohamed, *Nanofluid as Cooling Medium in PEM Fuel Cells,* **Malaysia-Japan International Conference on Nanoscience, Nanotechnology and Nanoengineering** 2014 (NANO-SciTech 2014 & IC-NET 2014), Shah Alam.
6. Wan Ahmad Najmi Wan Mohamed and R. Atan, *Experimental Heat Transfer of A Chaotic Flow Cooling Channel For An Air-Cooled PEM Fuel Cell Stack*, **3rd International Conference on Fuel Cell & Hydrogen Technology** (ICFCHT 2011), KL, 2011.
7. K.I. Sainan, Wan Ahmad Najmi Wan Mohamed and R. Atan, *Development of Single Cell Transparent Visualization Test Rig for Two-Phase Flow Analysis of a PEM Fuel Cell,* **3rd International Conference on Fuel Cell & Hydrogen Technology** (ICFCHT 2011), KL, 2011
8. Muhammad Rizuwan bin Mustaffa, Wan Ahmad Najmi Wan Mohamed and R. Atan, *Single Seated Fuel Cell Vehicle Simulation for Power Requirements Based on Variable Driving Conditions,* **3rd International Conference on Fuel Cell & Hydrogen Technology** (ICFCHT 2011), KL, 2011.
9. Zulizwan Hamdan, Wan Ahmad Najmi Wan Mohamed and R. Atan, *Computational Investigation of Counter-Flow Reactants Using CFD Ace+ With Experimental,* **3rd International Conference on Fuel Cell & Hydrogen Technology** (ICFCHT 2011), KL, 2011
10. K.I. Sainan, Wan Ahmad Najmi Wan Mohamed and R. Atan, *Analysis of PEM Fuel Cell Flow Field Design and Operation for Effective Water Removal,* **International Conference on Advances in Mechanical Engineering** (ICAME 2010), Shah Alam, 2010.
11. Muhammad Rizuwan bin Mustaffa, Wan Ahmad Najmi Wan Mohamed and R. Atan, *Preliminary Analysis on Fuel Cell Power Plant Design for Racing Vehicles,* **International Conference on Advances in Mechanical Engineering** **(ICAME 2010),** Shah Alam, 2010
12. Zulizwan Hamdan, Wan Ahmad Najmi Wan Mohamed and R. Atan, *Non-reacting Gas Pressure Analysis of Bipolar Plate Polymer Electrolyte Membrane Fuel Cell Flow Field Designs Using CFD,* **International Conference on Advances in Mechanical Engineering (ICAME 2010),** Shah Alam, 2010.
13. M. Fairuz Remeli, Wan Ahmad Najmi Wan Mohamed and R. Atan, *Cooling Mechanisms and Contribution Analysis of an Experimental Polymer Electrolyte Membrane Fuel Cell System,* **2nd Engineering Conference (ENCON)** 2010, Kuching, 2010.
14. Wan Ahmad Najmi Wan Mohamed and R. Atan, *Micro-Channel Optimization For An Air-Cooled Polymer Electrolyte Membrane Fuel Cell by CFD*, **2nd Engineering Conference (ENCON)** 2010, Kuching, 2010.
15. Wan Ahmad Najmi B. Wan Mohamed and R. Atan, *Thermal Engineering Performance Evaluation of a Polymer Electrolyte Membrane Fuel Cell Stack at Partial Load,* **Regional Conference on Mechanical and Aerospace Technology** 2010, Bali, 2010.
16. Wan Ahmad Najmi B. Wan Mohamed and R. Atan, *Optimizing Air Cooling Capability of Polymer Electrolyte Membrane Fuel Cells through Case-by-Case Cooling Channel Analysis,* **International Conference on Advances in Mechanical Engineering (ICAME),** Shah Alam, 2009.
17. Azli Abdul Razak, Wan Ahmad Najmi B. Wan Mohamed and R. Atan, *Effect of Channel Inclination on Cooling Capability of an Air-Cooled PEM Fuel Cell Plate using CFD,* **International Conference on Advances in Mechanical Engineering (ICAME),** Shah Alam, 2009
18. Wan Ahmad Najmi B. Wan Mohamed and Yiap Tea Sin, *Current and Possible Future Applications of Hydrogen Fuel Cells in Malaysia,* **International Conference on Advances in Mechanical Engineering (ICAME),** Shah Alam, 2009.
19. Arhosazani M. and Wan Ahmad Najmi B. Wan Mohamed, *Comparison of Combustion Performance Between Natural Gas and Medium Fuel Oil at Different Firing Settings for Industrial Boilers*, **International Conference on Mechanical And Manufacturing Engineering (ICME),** Johor Bharu, 2008.
20. Wan Ahmad Najmi B. Wan Mohamed, *Performance Analysis of an Inclined Grate Combustor for Solid Biomass Wastes,* **International Networking of Young Scientist in Renewable Energy (INYSRE),** Bangi, 2007.
21. Azhan M. Wan Ahmad Najmi B. Wan Mohamed and R. Atan, Horse Power Analysis of a Spark Ignition Internal Combustion Engine with Variable Ignition Strength and Timing at Stoichiometric Air-Fuel Ratio, **Conference of Scientific and Social Research (CSSR),** Sunway, 2007.
22. Nor Amalina Nordin, Noraini Wahab, Wan Ahmad Najmi Wan Mohamed and M. Hussain Ismail, *Vertical Tube ‘Heat and Drop’ Furnace from Jominy End Quench Test,* **Proc. of National Metallurgical Conference**, 2007.
23. Hazran Husain and Wan Ahmad Najmi Wan Mohamed, *Energy Consumption of Thermal Energy Storage at UiTM Based on Actual Building Load Profile,* **International Conference on Energy and Environment (ICEE),** Bangi, 2006
24. Wan Ahmad Najmi B. Wan Mohamed, Nik Rosli Abdullah and M.S. Izat, *Combustion Characteristics of Palm Kernel Shells Using an Inclined Grate Combustor,* **International Conference on Energy and Environment (ICEE), Bangi,** 2006.
25. Azhan M., Wan Ahmad Najmi B. Wan Mohamed and R. Atan, *Power Output Analysis of an Internal Combustion Engine with Variable Ignition Strength and Timing,* **National Seminar on Advances in Mechanical Engineering (NAME),** Kuala Lumpur, 2005
26. Wan Ahmad Najmi Wan Mohamed and Shahrani Anuar, *Factors Influencing the Design of a Fluidized Bed Parts-Cleaning System,* **National Seminar on Advances in Mechanical Engineering (NAME),** Kuala Lumpur, 2005.
27. Wan Ahmad Najmi Wan Mohamed, *Sequential Control of Cascading Hearth Staged Combustor Using Programmable Logic Controllers*, **Seminar on Research and Consultancy (SERAC) FKM UiTM** 2003.
28. Wan Ahmad Najmi Wan Mohamed and Shahrani Anuar, *Parts Cleaning Using Fluidized Bed Heat-Cleaning System,* **Seminar on Research and Consultancy (SERAC) FKM UiTM** 2003.
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**AWARDS**

1. **Anugerah Khidmat Cemerlang (Excellence in Service Award)** UiTM 2020.
2. **Anugerah Penasihat Program Bersiri Terbaik (Best Serial Programme Advisor) Kolej Kejuruteraan UiTM 2021 –** Webinar Training Series by the Boiler and Safety Engineering Club (BoSEC)
3. **Special Award** and **Gold Medal** for the Innovation of “**Thermoelectric Generator Module Design for Combined Heat and Power from Industrial Waste Heat**” at the Malaysian Technology Expo 2021.
4. **Gold Medal** for theInnovation of **“Thermoelectric Generator (TEG) Module Design for Combined Heat and Power from Industrial Waste Heat”** at the 2022 International Innovative Competition organized by Society for Advancement in Science and Technology, Malaysia & Sungaikolok Industrial and Community Education College, Thailand.
5. **Best Paper Award** at the Int. Conf. on Applied Sciences and Industrial Technology (ICASIT) 2015: *Thermal Performance of Al2O3 in Water - Ethylene Glycol Nanofluid Mixture as Cooling Medium in Mini Channels*.
6. **Best Concept Paper** at the 6th Int. Conf. on University Learning and Teaching (InCULT) 2012: *Industrial and academic collaboration strategies on hydrogen fuel cell technology development in Malaysia*.
7. **Gold Medal** for the Innovationof **“Hydrogen Fuel Cell System”** at the **IIDEX UiTM 2016.**
8. **Gold Medal** for the Innovationof **“Nanofluid Coolants for Fuel Cells”** at the **IIDEX UiTM 2016.**
9. **Silver Medal** for the Innovationof **“Porous Heat Sink Test Bench”** at the **IIDEX UiTM 2016.**
10. **Gold Medal** for the Innovation of "**Fuel Cell Trainer Kit**" at the **Innovation Platform 2012**, **UiTM** **Kedah.**
11. **Silver Medal** for the Innovation of "**Solarized Fuel Cell Trainer Kit**" at the **Invention, Innovation and Design Exhibition IIDEX UiTM 2014.**
12. **Bronze Medal** for Innovation of "**Fuel Cell Educational Kit**" at the **Int. Innovation, Invention and Design Competition and Conference (ICON) 2014, Terengganu.**
13. **Anugerah Khidmat Cemerlang (Excellence in Service Award)** UiTM 2006.

**EXPERIENCE & ACHIEVEMENT HIGHLIGHTS**

1. **Reviewer for Q1/Q2 journals** indexed by Web of Science: 92 verified reviews from 2018 – 2024 (highest review for Nano Energy Q1 IF 17.881).
2. **Chief-Editor**, Journal of Applied Engineering Design and Simulations (JAEDS), managed by Smart Manufacturing Research Institute UiTM, published by UiTM Press – since April 2021.
3. **Invited Respondent** for the Times Higher Education (THE) and QS Global Academic Reputation Surveys 2024.
4. **Central committee member (Head of ICT unit)** of the Malaysian Association of Hydrogen Energy (MAHE), 2021-2025.
5. **Invited Lecture Series** at Cagayan State University, Tuguegarao City, Philippines in August 2024 on “Hydrogen Technologies” and “Research & Publication Platform & Technicalities”.
6. **Committee Member for the** UiTM Development and Infrastructure Budget Committee (JWK Bajet Pembangunan dan Prasarana UiTM), 2024-2026.
7. **Committee Member for the** UiTM Procurement Committee (JWK Sebut Harga Rasmi UiTM), 2022-2026.
8. **Head** of UiTM Tier 4 Research Group (RG) – Efficient Energy Conversion Technologies, since 2019.
9. **Panel Penasihat Program (Program Advisory Panel),** Institut Sel Fuel, Universiti Kebangsaan Malaysiafrom 2019-2025.
10. **Ahli Jawatankuasa Kesepakaran** Institut Sel Fuel, Universiti Kebangsaan Malaysia since 2021.
11. **Keynote Speaker** for the 6th International Exchange and Innovation Conference on Engineering & Sciences (IEICES 2020) held on 22nd-23rd October 2020 at Kyushu University, Fukuoka, Japan.
12. **Chairman**, Research and Innovation Committee, Pusat Pengajian Kejuruteraan Mekanikal, UiTM Shah Alam, April 2021 – Mac 2023.
13. **Invited Speaker** for the Smart Manufacturing Research Centre (SMRI) UiTM Journal Writing Workshop, May 2024.
14. **Invited Speaker** for Universiti Pertahanan Nasional Malaysia (UPNM) workshop on Effective Postgraduate Supervision: Publication for Graduation on July 2022.
15. **Invited Speaker** for the Solar Research Institute (SRI) UiTM Journal Writing Workshop, July 2022.
16. **Invited Speaker** for Politeknik Pagoh on Writing Journal Articles, August 2024.
17. **Invited Speaker** for the UiTM Institute of Graduate Studies (IGS) for Effective Post-Graduate Supervision Course – *Publication for Graduation*, 2021 - 2023.
18. **Invited Speaker** for the UiTM Institute of Graduate Studies (IGS) Module 8 for Post-Graduates – *Publication in Scientific Journals*, 2019 - 2023.
19. **Invited Speaker** for the Alternative Energy Research Centre (AERC), FKM UiTM Journal Writing Workshop, October 2018.
20. **Invited Speaker** for the UiTM Institute of Graduate Studies (IGS) Module on Post-Graduates – *Getting Your Research Papers Published*, December 2018.
21. **Invited Speaker** for the Boiler & Safety Engineering Club (BOSEC) FKM Module on Basic Boiler Engineering – *Fuels, Emission, Burners & Heat Exchangers*, October 2018.
22. Appointed and served as **Judge** for the F1inSchools National Finals from 2007 – 2016, and 2022 - 2023.
23. Appointed and served as **Judge** for the F1inSchools World Finals in 2017.
24. **Invited Speaker** for the Multi Media University MESCORP Conference 2014 - *Hydrogen Fuel Cell: The Future of Clean and Efficient Energy in Malaysia*.
25. **Invited Speaker** for the Energy and Environment Cluster of UiTM: *Essentials in High-Indexed Publications* (2023).
26. **Invited Speaker** for the UiTM ILQaM Module on PhD on time: Pre-PhD preparation – *Selection of Project Title* (2014).
27. **Invited Speaker** for the UiTM Institute of Graduate Studies (IGS) Module on Post-Graduates – *Writing the Literature Review* (2016 - 2017).
28. Formerly served as **Head for the Thermofluids and Energy Centre of Studies** at the Faculty of Mechanical Engineering, UiTM (2011-2013).
29. Formerly served as **Head of the Alternative Energy Research Centre (AERC)**, a Special Interest Group (SIG) under the Faculty of Mechanical Engineering, UiTM (2013-2015).
30. Established the first Hydrogen Fuel Cell research lab and research project in UiTM (2008).
31. Established the first nanofluids lab and research project in UiTM (2013).
32. Founder and currently serving as **Chief** **Advisor to Boiler & Safety Engineering Club (BOSEC) FKM UiTM**, a student society in UiTM (since 2018).
33. Formerly served as **Advisor to Engine Union**, a student society in UiTM (2015-2016).
34. Founder and served as **Advisor to Green Tech Society (GTS) FKM UiTM**, a student society in UiTM (2013-2018 ).
35. **Head and Advisor for team ADROIT** - competed in the Shell Eco-Marathon Asia 2012 under the category of Hydrogen Fuel Cells.
36. Formerly served as **Advisor to Persatuan Siswa Siswi Kejuruteraan Mekanikal (PSSKM),** a student society in UiTM (2003-2006)