Ts. Dr. Amir Abdul Razak

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Biography

Ts. Dr. Amir Abdul Razak is a senior lecturer and researcher at Faculty of Engineering Technology (Energy & Environmental) in Universiti Malaysia Pahang. He obtained his Ph.D. in Renewable Energy focusing in Solar Thermal Absorbers from Solar Energy Research Institute, Universiti Kebangsaan Malaysia. He graduated from University of Applied Sciences Offenburg, Germany with a Master of Science (Engineering) in 2009 and Bachelor of Science (Engineering) in University of Applied Sciences Reutlingen in 2007. Prior his involvement with Universiti Malaysia Pahang, Amir was involved in Combined Heat and Cooling Power (CHCP) project at Fraunhofer Institute for Solar Energy System (ISE) in Department of Thermal System and Building Technologies. He has shown vast interest in Advanced Solar Thermal and Renewable Energy System research areas.

Education Background

2013 – 2017	Doctor of Philosophy *Universiti Kebangsaan Malaysia, Malaysia*
2007 – 2009	Master of Science Energy Conversion & Management *University of Applied Sciences Offenburg, Germany*
2003 – 2007	Bachelor of Science Mechatronics *University of Applied Sciences Reutlingen, Germany*

Career/Academic Appointments

2019 - current	Senior Lecturer *Faculty of Mechanical and Automotive Engineering Technology, Universiti Malaysia Pahang*
2018 - 2020	Head of Programme (Energy & Environmental) *Faculty of Engineering Technology, Universiti Malaysia Pahang*
2017	Assistant Deputy Dean of Academic *Faculty of Engineering Technology, Universiti Malaysia Pahang*
2013 - 2017	Senior Lecturer *Faculty of Engineering Technology, Universiti Malaysia Pahang*
2012 - 2013	Head of Programme (Energy & Environmental) *Faculty of Technology, Universiti Malaysia Pahang*
2012 - 2013	Lecturer *Faculty of Technology, Universiti Malaysia Pahang*
2009 - 2012	Lecturer *Faculty of Mechanical Engineering, Universiti Malaysia Pahang*

Courses Taught

BTV3453	Energy Auditing
BTV3463	Energy Management
BTU1113	Physics
BTV4703	Solar Energy System
BPS3313	Applied Mechanics for Safety
BTV3224	Heating, ventilation and Air Conditioning Technology
BTV2213	Thermodynamics
BTE1012	Electricity and Electronics Fundamentals Lab
BTU1001	Physics Laboratory
BMM3531	Engineering Thermodynamics Lab
BMM2523	Thermodynamics 2
BMM2513	Thermodynamics 1
BMM4723	Mechanism Design

Professional Affiliation

Malaysian Board of Technologist (MBOT)	Graduate Technologist (GT17080018)
Malaysian Board of Technologist (MBOT)	Professional Technologist (PT18050255)
Malaysia Society for Engineering & Technology	Ordinary member (Life Membership)
Malaysian Green Technology and Climate Change Centre	Certified Professional in Measurement and Verification (CPMV) (CPMV No. 19/267)
Suruhanjaya Tenaga	Registered Electrical Energy Manager (REEM) (PTE-0151-2019)
International Solar Energy Society (ISES)	Professional Member
International Association of Engineers (IAENG)	Member (105765)

Research Interests

Advanced Solar Thermal, Solar Drying, Solar Thermal Absorber and Solar Collector, Renewable Energy System.

Postgraduate Supervision

Level	Name	Title	Status	Role
PhD	Ahmad Fadzil bin Sharol	Forced Convection Turbulent Heat Transfer Mechanism in Unified Cross Matrix Channel With Latent Heat Storage Material	Active	Main Supervisor
PhD	Muhammad Amirul Azwan bin Azmi	Enhanced Solar Drying Chamber with Inclined Angle Air Distributor for Solar Drying System	Active	Main Supervisor
MSc	Muhammad Amir Syahiran bin Muhammad Tarminzi	Development of Modular Hybrid-Active Solar Drying System with Cross-Matrix Solar Collector	Active	Main Supervisor
MSc	Yow Hui Ming	Investigation on Energy Recycling in Agricultural Processing Industry Towards Net Zero Energy Facilities In Malaysia	Active	Main Supervisor
MSc	Mohd. Amirul Hilmi Bin Mohd Hanoin	Integrated Solar-driven Membrane Distillation System for Seawater Desalination	Active	Co-supervisor

Research Grants

Title	Type of Grant	Role	Amount (RM)	Status
Solar Assisted Drying Systems with the Double Pass Matrix Type Collector for Fish.	Translational MRUN-Rakan RU	Leader	115,000	Active
Forced Convection Turbulent Heat Transfer Mechanism in Unified Cross Matrix Channel with Latent Heat Storage Material	Internal Grant	Leader	3,500	Active
Enhanced Solar Drying Chamber with Inclined Angle Air Distributor for Solar Drying System	Internal Grant	Leader	3500	Active
Development of high-performance hybrid-active solar drying system with cross matrix absorber solar collector.	Internal Grant	Leader	29,700	Active
Parametric Investigation on The Effect of Swirling Flow in A Fluidized Bed by Using Residence Time Distribution (RTD) Model	Internal Grant	Member	32,665	Active
Investigation of Pressure Drop Reduction Mechanism in A Swirling Fluidized Bed by Using Speckle Light Field Method	FRGS	Member	83,200	Active
Advanced Treatment of Natural Rubber Processing Wastewater Using Solar Thermal Integrated Membrane Distillation System	Industrial Grant	Member	14,438	Active
Fabrication and Development of Integrated Solar-Driven Membrane Distillation System	Internal Grant	Member	30,000	Active
Modeling and analysis of modular wind turbine system	Internal Grant	Leader	26,000	Ended
Rapid Honey Dewatering Machine	Industrial grant	Member	48,850	Ended
Temperature Controlled Solar Based Ventilation System	Industrial grant	Member	4,050	Ended
Design and Development of Plug in Electric Vehicle for Proton Green Mobility Challenge	Industrial grant	Member	20,000	Ended
Analysis of diesel and biodiesel fuels spray characteristics for clear spray images by using nano-spark shadowgraphy technique	FRGS	Member	184,800	Ended
Simulation studies and experimental investigations of the temperature and residual stresses in dissimilar metals joints by friction stir welding technique	FRGS	Member	143,000	Ended
Performance of pontoon tidal current conversion type in decentralized rural electrification	Internal Grant	Member	36,000	Ended
Development of plug in hybrid air motorcycles based on single cylinder small volumetric displacement 4 stroke engine compressor	Internal Grant	Member	31,100	Ended
Design and development of intelligent image processing monitoring parking system with GSM reservation	Internal Grant	Member	30,100	Ended

Journal Publications

[1] Ahmad Fadzil Sharol, **Amir Abdul Razak**, Zafri Azran Abdul Majid, Ahmad Fudholi (2020). Experimental study on performance of square tube absorber with phase change material, **International Journal of Energy Research**. https://doi.org/10.1002/er.4971 (*WoS IF: 3.343*)

[2] Ahmad Fadzil Sharol, **Amir Abdul Razak**, Zafri Azran Abdul Majid, Muhammad Amirul Azwan Azmi, Muhammad Amir Syahiran Muhammad Tarminzi (2020). Evaluation on the Performance of Cross-Matrix Absorber Double-Pass Solar Air Heater (CMA-DPSAH) with and without Thermal Energy Storage Material. **Journal of Advanced Research in Fluid Mechanics and Thermal Sciences.** https://doi.org/10.37934/arfmts.70.2.3749 (*SCOPUS*).

[3] Lahimer, A.A., Sopian, K., **Razak, A.A.**, Ruslan, M.H., Alghoul, M.A. (2019). Experimental investigation on the performance of solar chimney for reduction of vehicle cabin soak temperature**, Applied Thermal Engineering**. https://doi.org/10.1016/j.applthermaleng.2019.02.021 (*WoS IF: 4.026*)

[4] **Razak, A.A.**, Majid, Z.A.A., Basrawi, F., Sharol, A.F., Ruslan, M.H., Sopian, K. (2019). A performance and technoeconomic study of different geometrical designs of compact single-pass cross-matrix solar air collector with square-tube absorbers. **Solar Energy**, https://doi.org/10.1016/j.solener.2018.12.010 (*WoS IF: 4.674)*

[5] Basrawi, F., Ibrahim, T.K., Sathiyaseelan, S.S., **Razak, A.A**. (2019). Experimental investigation on performance of solar-powered attic ventilation. **Springer Briefs in Applied Sciences and Technology.** https://doi.org/10.1007/978-981-13-2968-5_1 (*SCOPUS*)

[6] M Hanoin, NS Mohammed, M Arris, AIA Bakar, NM Mokhtar**, A.A. Razak** (2019). Fabrication and Performance Evaluation of Integrated Solar-Driven Membrane Distillation System with Serpentine-shape of Flat Plate Solar Collector for Seawater Desalination. **Journal of Applied Membrane Science & Technology** https://doi.org/10.11113/amst.v23n3.163

[7] **Razak, A. A.**, Majid, Z. A. A., Ruslan, M. H. & Sopian, K. (2016). Thermal absorber material selection for solar thermal bi-metallic multilayer crossed absorber. **International Journal of Advanced and Applied Sciences**. http://dx.doi.org/10.21833/ijaas.2016.08.010 (*WoS*)

[8] **Razak, A. A.**, Majid, Z. A. A., Ruslan, M. H. & Sopian, K. (2015). Thermal performance analysis of staging effect of solar thermal absorber with cross design. **Malaysian Journal of Analytical Sciences**. (*SCOPUS*)

[9] Majid, Z. A. A., **Razak, A. A.,** Ruslan, M. H. & Sopian, K. (2015). Characteristics of solar thermal absorber materials for cross absorber design in solar air collector. **International Journal of Automotive and Mechanical Engineering**. http://dx.doi.org/10.15282/ijame.11.2015.36.021 (*SCOPUS, WoS*)

[10] **Razak, A. A.**, Majid, Z. A. A. Azmi, W. H., Ruslan, M. H., Choobchian, S., Najafi, G. & Sopian, K. (2016). Review on matrix thermal absorber designs for solar air collector. **Renewable and Sustainable Energy Reviews**. https://doi.org/10.1016/j.rser.2016.06.015 (*WoS IF: 10.556*)

[11] Jamar, A., Majid, Z. A. A., Azmi, W. H., Norhafana, M., **Razak, A. A.** (2016). A review of water heating system for solar energy applications. **International Communications in Heat and Mass Transfer**. https://doi.org/10.1016/j.icheatmasstransfer.2016.05.028 (*WoS F1: 4.127*)

[12] Mahendran, M., Lee, G. C., Shahrani, A., Bakar, R. A., Kadirgama, K., **Amir, A. R.,** Sharma, K. V. (2013). Diurnal pattern and estimation of global solar radiation in East Coast Malaysia. **International Journal of Automotive and Mechanical Engineering**. http://dx.doi.org/10.15282/ijame.8.2013.7.0095 (*SCOPUS, WoS*)

[13] **Amir A. Razak** (2012). Library structure of dynamic simulation for Combined Heat and Power Plant in Modelica language. **Applied Mechanics and Materials**. https://doi.org/10.4028/www.scientific.net/AMM.110-116.4925 (SCOPUS)

[14] **Amir A. Razak** (2012). Overview of wind turbine modelling in Modelica language. **International Journal of Engineering and Technology.** http://doi.org/10.7763/IJET.2012.V4.430 (Peer reviewed)

[15] **Amir A. Razak** (2012), "Development of Modelica Library for Dynamics Simulation of CHP Plant: Modelica library structure design and modeling for transient simulation of Combined Heat and Power (CHP) plant [Paperback Book]**", LAP LAMBERT Academic Publishing.** ISBN 978-3-8465-4755-7.(Book)

Conference Proceedings

[1] Sharol, A.F., **Razak, A.A.**, Majid, Z.A.A., Azmi, M.A.A., Tarminzi, M.A.S.M. (2019). Performance of force circulation cross-matrix absorber solar heater integrated with latent heat energy storage material, **IOP Conference Series: Materials Science and Engineering**. (SCOPUS)

[2]

[3] Basrawi, F., Al-Anati, A.I.M., Ibrahim, T.K., Yusof, M.H., **Razak, A.A.,** Sulaiman, S.A., Yamada, T. (2018).Theoretical Analysis on the Micro Gas Turbine Integrated Solar Farm for Power Output Stabilization. MATEC Web of Conferences (**SCOPUS**)

[4] Basrawi, F., Leon, Y.C., Ibrahim, T.K., Yusof, M.H., **Razak, A.A.**, Sulaiman, S.A., Yamada, T. (2018). Experimental Analysis on the Effect of Area of Surface Cooling for a Water-Cooled Photovoltaic. **MATEC Web of Conferences** (SCOPUS)

[5] Zailan, R., Zaini, S.N., Mohd Rashid, M.I., **Abdul Razak, A**. (2017). Feasibility Study of Standalone PV-Wind-Diesel Energy Systems for Coastal Residential Application in Pekan, Pahang. **MATEC Web of Conferences**. (SCOPUS)

[6] Majid Z. A. A., **Razak A. A.**, Ruslan M. H., Sopian K. (2014). Characteristics of solar thermal absorber materials in cross absorber with combined material for solar air thermal collector. **International Conference on Automotive Innovation and Green Energy Vehicle**. (Best Paper Award)

[7] Thermal performance analysis of staging effect of solar thermal absorber with cross design. (2014). Solar Energy Research Institute Colloquium 2014, Universiti Kebangsaan Malaysia.

[8] Mathematical modelling of cross matrix absorber solar air collector (2014). Solar Energy Research Institute Colloquium 2016, Universiti Kebangsaan Malaysia.