



# DR. MUSTAFA FADHEL

*-Program Leader /Senior Lecturer*

## INTERNATIONAL JOURNAL PUBLICATIONS

SM Soltan, CP Tso, EEM Noor, MI Fadhel and SA Alkaf. 2020. Parametric study of photovoltaic thermal solar collector using an improved parallel flow. *Journal of Engineering Technology and Applied Physics* 2 (1), 19-24.

Mustafa I. Fadhel. 2015. An Experimental study of a small-scale solar assisted absorption cooling system for Tropical climate. *International Journal of Engineering Innovations and Research*, 4(3); 441-445.

M I. Fadhel, Saqaff A. Alkaff, W.C. Teo, and K. Sopian. 2015. Analysis of solar assisted CaO/Ca(OH)<sub>2</sub> chemical heat pump drying system. *International Journal of Smart Grid and Clean Energy*, 4(4), 211-315.

Mustafa I. Fadhel. 2014. Drying characteristics of lemongrass in solar assisted chemical heat pump dryer. *International Proceedings of Chemical, Biological & Environmental Engineering (IPCBE)*, 77:39-45.

Logah Permul, M. I. Fadhel. 2014. New polyhedral elements based on virtual node method for solid mechanics and heat transfer applications. *Applied Mechanics and Materials*, 493: 367-371.

Basem Abu Izneid, M. I. Fadhel, Tareq Al-Kharazi, Malek Ali and Souiyah Miloud. 2014. Design and develop a nondestructive infrared spectroscopy instrument for assessment of mango (*mangifera indica*) quality. *Journal of Food Science and Technology*, 51(11): 3244-3252.

Sakhr M. Sultan, M. I. Fadhel and S. A. Alkaff. 2014. Performance analysis of the Photovoltaic/Thermal collector (PV/T) system for different Malaysian climatic conditions. *Applied Mechanics and Materials*, 467: 522-527.

S. A. Alkaff and M. I. Fadhel. 2013. Study of harvesting rainwater system for Multimedia University (MMU). *International Journal of Chemical and Environmental Engineering*, 4 (4): 249-254.

M. I. Fadhel, Sakhr M. Sultan and S. A. Alkaff. 2013. Theoretical study of new configuration of Photovoltaic/Thermal solar collector (PV/T) design. *Advanced Materials Research*, 772: 681-687.

Mustafa I. Fadhel, K. sopian, W.R.W. Daud and M. A. Alghoul. 2013. Studies on an experimental performance of solar assisted chemical heat pump dryer. *International Journal of Chemical and Environmental Engineering*, 4 (1): 70-74.

Malek Ali, Projjal Basu, Marwa liwa, M. I. Fadhel, Souiyah M., and Basem Abu Ziend. 2013. Comparison between the properties of Al-TiC and Al-(TiC+Fe<sub>3</sub>C+Fe<sub>2</sub>Ti+Fe) composites. *The Arabian Journal for Science and Engineering*, 38: 2785 - 2791.

Souiyah Miloud, A Muchtar, A K Ariffin, Malek Ali, M. I. Fadhel, Basem Abu Zneid. 2012. Finite element model of crack growth under mixed mode loading. *International Journal of Material Engineering*, 2 (5): 67-74.

A.A. Lahimer, M.A. Alghoul, K. Sopian, Nowshad Amin, Nilofar Asim and M.I. Fadhel. 2012. Research and development aspects of Pico Hydro power. *Renewable and Sustainable Energy Reviews*, 16 (8): 5861-5878.

M. I. Fadhel, K. Sopian, W.R.W. Daud and M. A. Alghoul. 2011. Review on advanced of solar assisted chemical heat pump dryer for agriculture produce. *Renewable and Sustainable Energy Reviews*, 15 (2): 1152-1168.

Yousef A. Eltbaakh, M.H. Ruslan, M.A. Alghoul, M.Y. Othman, K. Sopian, M.I. Fadhel. 2011. Measurement of total and spectral solar irradiance: Overview of existing research. *Renewable and Sustainable Energy Reviews*, 15 (2011) 1403-1426.

P. Poovanaesvaran, M.A. Alghoul, K. Sopian, N. Amin, M. I. Fadhel, and M.Yahya. 2011. Design aspects of small-scale photovoltaic brackish water reverse osmosis (PV-BWRO) system. *Desalination and Water Treatment*, 27: 210-223.

M. I. Fadhel, K. Sopian, W.R.W. Daud. 2010. Performance analysis of solar assisted chemical heat pump dryer. *Solar Energy*, 84 (11): 1920-1928.

M. Ibrahim, k. Sopian, W.R.W. Daud, M. A. Alghoul. 2009. An experimental analysis of solar-assisted chemical heat pump dryer. *Intl Jnl of Low-Carbon Technologies*, 4(2):78-83.

M. Ibrahim, k. Sopian, W.R.W. Daud, M. A. Alghoul, M. Yahya, M.Y.Sulaiman, and A. Zaharim. 2009. Solar chemical heat pump drying system for tropical region. *WSEAS Transactions on Environment and Development Journal*, 5(5):404-413.

Mustafa Ibrahim, K. Sopian and W.R.W. Daud. 2009. Study of the drying kinetics of lemon grass. *American J. of Applied Sciences*, 6(6):1070-1075.

Dr. Mustafa has approximately 29 years of academic and industrial experience in the field of engineering, particularly in mechanical and materials engineering. He has extensive experience in teaching, supervising, and co-supervising undergraduate and postgraduate students, delivering public presentations, and publishing several works in mechanical and materials engineering. He has made numerous academic and professional contributions to teaching, research, administration, consultancy, conferences, seminars, and other professional services.

## AREA OF EXPERTISE

THERMO-FLUID AND ENERGY.  
RENEWABLE ENERGY.  
HYDROGEN AND FUEL CELL.  
REFRIGERATION AND AIR CONDITIONING.  
MECHANICAL ENGINEERING DESIGN.  
POWER PLANT ANALYSIS AND MODELING.  
COMPUTATIONAL FLUID DYNAMICS (CFD).  
MECHATRONICS AND CONTROL.

## FUNDED RESEARCH

DEVELOPMENT OF SOLAR ASSISTED CHEMICAL HEAT PUMP DRYER FOR AGRICULTURE PRODUCES/FUNDED BY MINISTRY OF HIGHER EDUCATION, MALAYSIA (FRGS), USD 20,000.

DEVELOPMENT OF PHOTOVOLTAIC/THERMAL SOLAR COLLECTOR SYSTEM/FUNDED BY TELECOM MALAYSIA, USD 40,000.

ASSESSMENT OF FREE POWER LIGHTING FOR HIGHWAYS/FUNDED BY MINISTRY OF HIGHER EDUCATION, MALAYSIA (ERGS), USD 30,000.

Mustafa I. Fadhel and Ayman Aldarabie. Smart thermal environmental and noise monitoring to enhance indoor comfort for classroom: a case study at International College of Auckland, New Zealand. 5th International Conference on Mathematics and Computers in Science and Engineering (MACISE 2024), June 6-8, 2024.

Mustafa I. Fadhel. Design and Fabricate a Small-Scale Portable Device for Non-Destructive Quality Detection of Fruits. 2nd International Conference on Electrical Engineering and Computational Science (ICELECS 2024), which took place in Bern, Switzerland, June 27-30, 2024.

Abdelgaddir, Ayman Khalil and M. I. Fadhel. 2014. Review on developing a residential projects sustainability assessment tools for developing countries (with a focus in greater Khartoum). Proceedings of SEEP2014, 23-25 November 2014, Dubai-UAE.

Yousef A. Eltbaakh, M.H. Ruslan, M.A. Alghoul, M.Y. Othman, M. I. Fadhel, K. Sopian. 2012. Spectral Transmittance Under Cloudless Sky Over Bangi-Malaysia. IAASAT Conference on Environment, Economics,

Energy, Devices, Systems Communications, Computers, Mathematics. (Saint Malo & Mont Saint-Michel, France, April 2-4, 2012, 145-151.

Adrian Ngu, M. Ibrahim, Cheah Bin and B. F. Yousif Chuan. 2009. On the development of solar drying system. Proceedings of IMECE2009. ASME International Mechanical Engineering Congress and Exposition November 13-19, Lake Buena Vista, Florida, USA.

M. Ibrahim, K Sopian and W. R. W. Daud. Experimental and theoretical study on the performance of solid-gas chemical heat pump subsystem of solar dryer. Environmental Science and Technology Conference (ESTEC2009) Kuala Terengganu Malaysia, December 7-8, 2009.

Mustafa Ibrahim, K. Sopian, W.R.W. Daud. Drying kinetics of lemon grass. 2007. Regional Conference on Engineering Mathematics. Mathematics, Manufacturing and Architecture 2007. Putrajaya, Malaysia (27-28 November 2007) ISBN 983-2982-18-0. pp (54-62).

M. Ibrahim, K. Sopian and W. R. W. Daud. 2006. CFD study of water flow in an electrolyzer's spacer. World Renewable Energy and Environment Conference (22-24) January 2006, Libya.

M. Ibrahim, K. Sopian and Shahrir Abdullah. 2006. CFD study of the effect of porous media on the performance of the double pass solar air heater. The Second International Conference on Thermal Engineering Theory and Application. (3-6) January 2006, UAE.

Mustafa Ibrahim, Kamaruzzaman Sopian, Wan Ramli Wan Daud and M. Z. Ibrahim. 2004. 1kW solar hydrogen production system. Advances in fuel cell research and development in Malaysia (213-219).

M. Ibrahim, K. Sopian and W. R. W. Daud. 2004. A Short- Cut design method for adsorber for a solar hydrogen system. Advances in Malaysian energy research. pp (93-100).

M. Ibrahim, K. Sopian and W. R. W. Daud. 2003. Design of the electrolyzer for the solar hydrogen production system. International symposium on renewable energy (14-17) September 2003. Kuala Lumpur, Malaysia (189-197).

Mustafa I. Fadhel. Recent advancements in solar drying. Solar drying: Fundamentals, Applications and Innovations, Edit by Hii Ching Lik, Jangam, S. V., Mujumdar, A. S., National University of Singapore, Singapore, 978-981-07-3336-0, chapter 6, pp: 123-150.

M. I. Fadhel, Sanmugaraj Shaunmuganathan, Malek Ali, K. Sopian M. A. Alghoul and A. Zaharim. 2012. Drying Kinetics of Chilli Pepper in a force

Convection Indirect Solar Drying. Recent Researches in Energy, Environment and Sustainable Development, 978-1-61804-105-0, pp: 47-52.

Malek Ali, Ali Samer Muhsan, M. I. Fadhel, M. A. Alghoul, K. Sopian and A. Zaharim. 2012. Developments of Al-12Si alloys by reinforcing TiN particles. Recent Researches in Energy, Environment and Sustainable Development, 978-1-61804-105-0, pp: 42-46.

M. I. Fadhel, k. Sopian, W.R.W. Daud, M. A. Alghoul. 2012. Economic analysis of solar assisted chemical heat pump dryer. Models and Methods in Applied Sciences, 978-1-61804-082-4, pp: 134-139.

k. Sopian, M. I. Fadhel, W.R.W. Daud, M. A. Alghoul. 2012. Design and performance evaluation of solar assisted chemical heat pump dryer. Models and Methods in Applied Sciences, 978-1-61804-082-4, pp: 118-123.

Mustafa I. Fadhel. 2012. An experimental study of kit fuel cell car to supply power. Models and Methods in Applied Sciences, 978-1-61804-082-4, pp: 22-27.

Malek Ali, M. I. Fadhel, M. A. Alghoul, K. Sopian. 2012. Synthesis and Characterization of Aluminum Matrix Composites Reinforced with Various Ratio of TiC for Light Devices. Models and Methods in Applied Sciences, 978-1-61804-082-4, pp: 169-174.

M. I. Fadhel, Ramez Abdulwasea Abdo, B. F. Yousif, Azami Zaharim and K. Sopian. 2011. Thin-layer drying characteristics of Banana slices in a force convection indirect solar drying. Recent Researches in Energy & Environment, 978-960-474-274-5, pp: 310-315.

M. Ibrahim, W. R. W. Daud, Kamaruzzaman Ibrahim, Azami Zaharim, Kamaruzzaman Sopian. 2010. Performance of solid-gas chemical heat pump subsystem of solar dryer. Recent Advances in Applied Mathematics, 978-960-474-150-2, pp: 499-593.

A. S. Hussien, M. Ibrahim, A. Zaharim and K. Sopian. 2009. Predicting the performance of chemical heat pump with various metallic-salts drying system. Energy Problems & Environmental Engineering, 978-960-474-093-2, pp: 262-266.

M. Ibrahim, K. Sopian, Ahmed S. Husain, W.R.W. Daud and A. Zaharim. 2009. Experimental performance of solid-gas chemical heat pump in solar chemical heat pump dryer. Recent Advances in Energy & Environment, 978-960-474-055-0, pp: 405-410.

M. Ibrahim, K. Sopian, W.R.W. Daud, M. Yahya, M. A. Alghoul and A. Zaharim. 2008. Performance prediction of solar assisted chemical heat pump drying system in tropical region. Renewable Energy Sources, 978-960-474-015-4, pp (122-126).

National Workshop on  
Renewable Energy Applications  
for Rural Population – Malaysia,  
22 -26 /10/ 2007.

Seminar on Progress of Solar  
Energy Research and  
Development – Malaysia, 21  
-22/10/ 2008.

Solar Energy Technology  
Roadmap Workshop – Malaysia,  
26 -27 /4/ 2010.

Seminar on Engineering  
Curriculum, Engineering Study  
Plan and Engineering Outcome  
Based Education (OBE)- Oman,  
02/02/2015.

Workshop on how to choose and  
complete the graduation project  
– Oman, 20-22/4/2015.

Applications of Power Electronics  
in Renewable Energy Workshop/  
Caledonian College of  
Engineering/ Oman, 29/4/2015.

Seminar on Engineering Outcome  
Based Education (OBE), Study  
Plan and Courses Outcomes and  
relations between POs and ILOs  
– Oman, 23/2/2016.

Seminar on Industrial Training  
Program (ITP) for Mechanical  
Engineering and Internship  
program (IP) for Architectural  
Engineering – Oman, 23/2/2016.

Seminar on linking ILO's in  
Teaching, Learning and  
Assessments – Oman,  
15/3/2016.

MUSTAFA I. FADHEL AND  
YIJIN WU. 2015. ENERGY  
AND MATERIALS  
RESEARCH FOR THE  
FUTURE. TRANS TECH  
PUBLICATIONS INC. (TTP).  
ISBN: 978-3-03835-426-0,  
284 PAGES.

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THE 2ND INTERNATIONAL  
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SCIENCES 2015 (CMES  
2015). MARCH 14-15,  
2015, LONDON, UK.**