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Faculty of Mechanical Engineering,
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Academic Qualification

M.Eng entitled "Combustion Characteristics of Ammonium Perchlorate Based Solid Propellant", Universiti Teknologi Malaysia (2011)

BSc (Mechanical Aeronautics) Department of Mechanical Aeronautics, University Teknologi Malaysia (2008)

Brief Profile

My primary research interest is in combustion and performance of solid fuel. Also my interest is in performance and emission of diesel engine. More recently I have undertaken research on the alternative fuels for internal combustion engines including biodiesel and emulsified fuel.

Working Experiences / Appointment

1. August 2011 ~ to date Lecturer, Faculty of Mechanical Engineering, Universiti Malaysia Pahang.
2. June 2008 ~ July 2011 Research Assistant in project entitled, Program Penyelidikan Pembangunan Teknologi Roket antara Agensi Angkasa Negara dan Universiti Teknologi Malaysia, under Vot 68730, (amount RM938, 000) Universiti Teknologi Malaysia, Rocket Technology Research Program.
3. July 2010~ July 2011 Part time coach for kayak UTM. Sports Unit, Universiti Teknologi Malaysia.
4. May 2007 ~July 2007 Research Assistant in project entitled First Year Development of Durable Solid Propellant and Rocket Motor under Vot. 77012, (amount RM345, 000). Universiti Teknologi Malaysia, Short-Grant UTM.

Expert Area

Combustion, Solid Propulsion

Research Interest

Rocket Propulsion System and Internal combustion engines

Research Project / Grant

No	Research/ Project Title	Grant	Post
1.	Combustion Characteristic of Emulsified Biodiesel.; (RDU120116),	FRGS	Project Leader

2.	Combustion Characteristics Of Ammonium Per Chlorate Base Solid Propellant At High Pressure. RDU121307.	RACE	Project Leader
3.	Experimental Investigation of Tidal Current Energy Extraction Potential in Kuala Pahang. (RDU120318)	UMP	Project Leader
4.	Ambient Air Quality Monitoring of Particulate Matter in around Waste Facilities	UMP	Project Leader
5.	On Board Emulsifier Fuel System For Commercial Diesel Engine (Program Rakan Penyelidikan Universiti Malaya)	UM	Project member
6.	Fundamental Study Of Jatropa Biodiesel Oil On Ultra-Low Emission Homogeneous Charge Compression Ignition Engine Combustion (RDU130131)	FRGS	Project member
7.	The Effect of Steam Injection on Power and Emission of Hybrid Air-Diesel Engine Using Steam Injector (RDU130134)	FRGS	Project member
8.	Concentrating Solar Thermal-Powered Biomass Syngas Modelling Process for Green Electricity Conversion (RDU130135)	FRGS	Project member
9.	The Influent of Driving Behavior Factors To Road Vehicle Safety and Accident Reduction (RDU130130)	FRGS	Project member
10.	Development of Fuel Testing System on Chassis Dynamometer for Compressed Natural Gas Direct Injection Powered Vehicle (RDU130313)	UMP	Project member
11.	Design and Development of Automobile Cooling System Using New Coolant, RDU110350	UMP	Project member
12.	Analysis of Tire Dirived Fuel Spray and Combustion Characteristics Inside Optical Accessible Chamber by Using Shclieren Photography Technique, RDU121418	UMP	Project member
13.	Electrostatic Charging of Diesel Particulate Matter from Automobile Exhaust Gas, RDU110112	FRGS	Project member
14.	Nano Particle's Heat Transfer Characteristics in Refrigeration and Automotive Airi Conditioning Systems for Reductiion ofo Energy Consumption, RDU121408	UMP	Project member
15.	Development of High Energetic Materials from Renewable Energy Resources, RDU110310	UMP	Project member
16.	The Development of High Temperature Combustor System for High Performance Furnace Unit, RDU110301	UMP	Project member
17.	Mixture Formulation and Combustion Characteristics of Diesel-Hydrogen Dual Fuel Engine, RDU100113	UMP	Project member

18.	"Program Penyelidikan Pembangunan Teknologi Roket antara Agensi Angkasa Negara dan Universiti Teknologi Malaysia", under Vot 68730	ANGKASA	(Researcher).
19.	Experimental and Numerical Investigation of Phase Material as Heat Storage from a Concentrating Solar Collector, RDU1403120	UMP	Project member

Professional Qualification / Membership / Affiliation / Experience

As a Journal & Paper Reviewer

1. International Conference On Automotive Innovation And Green Energy Vehicle (AiGEV)
2. International Conference In Mechanical Engineering Research (ICMER) 2013.
3. International Conference on Green Technology & Ecosystems for Global Sustainable Development 2012 (ICGTEC2012)
4. UMP Post-Graduate Journal 2011
5. Reviewer journal UTM

Teaching Experience

1. BMM2513 **THERMODYNAMICS 1**
2. BMM2523 **THERMODYNAMICS 2**
3. BMM3531 **ENGINEERING THERMODYNAMICS LAB**
4. DMM2543 **THERMODYNAMICS**
5. DMM1412 **ENGINEERING DRAWING**
6. BMM3521 **ENGINEERING FLUIDS MECHANICS LAB**
7. BMM4733 **POWER PLANT TECHNOLOGY**
8. BMM3623 **MECHANICAL DESIGN**
9. DMM1911 **MECHANICAL TECHNOLOGY LAB 1**
10. DMM1921 **MECHANICAL TECHNOLOGY LAB 2**
11. BMM3623 **MECHANICAL DESIGN**
12. BMM1511 **ENGINEERING MECHANICS LAB 1**

Degree / Final Year Supervision

Year 2014/2015

No	Name	Thesis Title
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1.	Awang Ku Afif Irfan Bin Ag Jaafar	Study on the effect of particulate matter from landfill to human health
2.	Muhamad Salihi bin Mat Aripin	Air Quality Monitoring of Particulate Matter Around Landfill
3.	Mohammad Syafiq Bin Zulkifli	Development of KNO ₃ Solid Propellant Rocket Motor

Year 2013/2014

No	Name	Thesis Title
1.	Mohd Hanif Bin Md Salim	Development of high pressure strand burner (SV)
2.	Mohd Firdaus Bin Osman	Burn rate of AP based solid propellant at high pressure (SV)
3.	Wong Chung Siong	Performance of diesel engine using emulsified biodiesel fuel (SV)
4.	Shalman Bin Abidin	Development of Electrostatic Precipitator (ESP) removal of Diesel Particulate Matters (co-SV)
5.	Muhd Khairul Bin Ismail	Diesel Engine Operating With Bio-algae (co-SV)
6.	Muhammad Amzar Bin Mohd Kamal	Engine performance using emulsified diesel fuel (co-SV)
7.	Abdullah Faiq Bin Yaakob	Engine performance using bio-algae fuels (co-SV)
8.	Nurdini Binti Shapri	Investigate the Electrostatic precipitator (ESP) efficiency and particle size distribution on diesel engine using Biodiesel fuels. (SV)
9.	Mohamad fakhrul Asraf Alias (PTA)	Desing and Fabricate Propellant Mould. (SV)
10.	Nazren Shah Bin Azhar (PTA)	Design And Fabricate Compression Machine For Propellant Fabrication (SV)
11.	Tay Say Young (PTA)	Design and Fabrication of Rocket Motor (SV)

Year 2012/2013

No	Name	Thesis Title
1.	Elexanderio Julit Anak Iling	Development Of Igniter System For Solid Rocket Motor (SV)
2.	Muhammad Asyraf Bin Jusoh	Study on Emission of a Diesel Engine Operating with Emulsified Biodiesel (SV)
3.	Wan Nor Azeem Bin Wan Ghazali	Combustion Characteristics of Emulsified Biodiesel (SV)
4.	Muhammad Nor Ridzuan Bin M. Taifor	Development Of Emulsifier For Biodiesel Fuel. (SV)
5.	Abdul Muiz Bin Jaafar	Experiment & Analysis for Exhaust Design (co-SV)
6.	Loh Chong Sean	Design, Fabrication & Testing Of Water Chanel (co-SV)
7.	Muhammad Shahrul Bin Sabri	Numerical & Experimental Investigation Of Tidal Current Energy Extraction (co-SV)

8.	Ahmad Hakimi Bin Abdul Nasir	Development Of Ammonium Perchlorate Based Solid Propellant (co-SV)
9.	Nor Faiezza Binti Arsyad	Simulation Of Low Speed Water Flow On Water Channel (co-SV)

Year 2011/2012

No	Name	Thesis Title
1.	Mohamad Ridwan Raja Mohd	Design, Fabrication & Testing of Small Scale Turbine Jet Engine (SV)
2.	Mohammad Norshim Mohamed Hashim	Development of Solid Rocket Propellant (SV)
3.	Nur Fitriana Mat Nawi	Development of a weather modification launcher system (SV)
4.	Putri Norfazreen Razali	Development of High Efficiency Combustor System for Industrial Furnace (SV)
5.	Mohamad Naqib Amirul Abdul Rashid	Development of diesel engines cooling system (co-SV)
6.	Muhammad Hafizuddin Salim	Development of variable intake system for spark-ignition engine (co-SV)

List of Publications

A) International and National Journal

1. **Amir Aziz**, Ahmad Fitri Yusof, Rizalman Mamat and W. N. Azeem W.G, "*Engine Performance and Emission of Emulsified Biodiesel*" Applied Mechanics and Materials Vol. 607 (2014) pp 588-593.
2. **Amir Aziz**, Wong Chung Siong, Rizalman Mamat and Ftwi Yohaness Hagos "*Exhaust Emissions Reduction Of Diesel Engine Fueled With Emulsified Palm Oil Methyl Esters*" Applied Mechanics and Materials Vol. 660 (2014) pp 457-461.
3. A.F. Yusop, R. Mamat, M.H. Mat Yasin, A. Adam Abdullah and **Amir Aziz** "*Comparative Study Of Particulate Matter (Pm) Emissions In Diesel Engine Using Diesel-Methanol Blends*" Applied Mechanics and Materials Vols. 465-466 (2014) pp 1255-1261.
4. Akasyah M. Kathri, Rizalman Mamat, **Amir Aziz**, Azri Alias and Nik Rosli Abdullah "*Combustion Characteristic of a Diesel Engine Operating with Methanol as Alternative Fuel*" Applied Mechanics and Materials Vol. 660 (2014) pp 452-456.
5. Akasyah M. Khathri, Rizalman Mamat, **Amir Aziz**, Azri Alias and Nik Rosli Abdullah "*One-Dimensional Simulation of the Combustion Process in an Engine Cylinder with Ethanol*" Applied Mechanics and Materials Vol. 660 (2014) pp 447-451
6. **A Aziz**, A Jusoh, R Mamat, AA Abdullah "*Effect of Water Content and Tween 80 to the Stability of Emulsified Biodiesel*", Applied Mechanics and Materials 465, 191-195, 2014.
7. **A Aziz**, R Mamat, WKW Ali "*Development of Strand Burner For Solid Propellant Burning Rate Studies*", IOP Conference Series: Materials Science and Engineering 50 (1), 012048, 2013.
8. R Mamat, AF Yusop, R Rahim, **A Aziz**, LA Shah "*Fuel Physical Characteristics of Biodiesel Blend Fuels with Alcohol As Additives*", Procedia Engineering 53, 701-7063, 2013.

9. S Suhaimi, R Mamat, AA Abdullah, **A Aziz**, NR Abdullah “*Investigation of Intake Flow Rate and Swirl Motion of SI Engine*”, Applied Mechanics and Materials 465, 409-417, 2014.
10. AF Yusop, R Mamat, M Yasin, M Hafizil, AA Abdullah, **A Aziz** “*Comparative Study of Particulate Matter (PM) Emissions in Diesel Engine Using Diesel-Methanol Blends*”, Applied Mechanics and Materials 465, 1255-1261, 2014.
11. Ahmad Fitri Yusop, Mohd Hafizil Mat Yasin, Rizalman Mamat, Abdul Adam Abdullah and **Amir Aziz** “*PM Emission Of Diesel Engines Using Ester-Ethanol-Diesel Blended Fuel*”, Procedia Engineering, Vol. 53 (2013) pp. 530 – 535
12. Rizalman Mamat, Rafidah Rahim, Abdul Adam Abdullah, **Amir Aziz**, Nik Rosli Abdullah, “*Characteristic of Biodiesel Fuel Derived from Palm Oil*”, Journal of Biobased Material & Bioenergy, Vol. 6, 1–4, 2012. (ISSN: 1556-6560, ISI Impact Factor: 1.402).
13. Rizalman Mamat, Ahmad Fitri Yusop, Abdul Adam Abdullah, **Amir Aziz** and Nik Rosli Abdullah, “*Effect of Exhaust Gas Recirculation System and Air Temperature on Exhaust Emission of a Diesel Engine Operating with Biodiesel*”, Journal of Biobased Materials and Bioenergy Vol. 6, 1–3, 2012.
14. Rizalman Mamat, Ahmad Fitri Yusop, Abdul Adam Abdullah, **Amir Aziz**, Nik Rosli Abdullah, “*Effect of EGR and Air Temperature on Exhaust Emission of a Diesel Engine Operating with Biodiesel*”, Journal of Biobased Material & Bioenergy, (ISSN: 1556-6560, ISI Impact Factor: 1.402).
15. **Amir Aziz** , Rizalman Mamat, Wan Khairuddin Wan Ali and Makeen Amin, “*Effect of Propellant Composition to the Temperature Sensitivity of Composite Propellant*”, Material Science and Engineering, Volume 36, 2012.
16. **Amir Aziz** and Wan Khairuddin Wan Ali, “*A Study of Basic Aluminized Propellants Characteristics*”, Advanced Materials Research Journal, 2011.
17. **Amir Aziz** and Wan Khairuddin Wan Ali “*The Study of Burning Characteristics of Ap/HTPB/Al Basic Components of A Composite Propellant*”, Journal of Aerospace Engineering & Technology Volume 1, Issue 1, February, 2011, 21-26p.
18. **Amir Aziz** and Wan Khairuddin Wan Ali, “*Effect of Oxidizer-Fuel Mixture Ratio to the Pressure Exponent of Ammonium Perchlorate Based Composite Propellant*” Advanced Materials Research Journal, 2011.

B) International and National Conference Papers

1. Rizalman Mamat, Abdul Adam Abdullah and **Amir Aziz**, “*Performance and Emission of a Diesel Engine Operating with Palm Oil Methyl Ester (Palm Biodiesel)*” XII International Symposium on Environmental Geotechnology, Energy and Global Sustainable Development. Los Angeles, CA, June 27-29, 2012.
2. Rizalman Mamat, Abdul Adam Abdullah and **Amir Aziz**, “*Properties of Palm Oil Methyl Ester as Alternative Fuel for Diesel Engine*” ICGTEC2012
3. Mohd Hafizil Mat Yasin, Rizalman Mamat, Ahmad Fitri Yusop, **Amir Aziz**, *Fuel Physical Characteristics of Biodiesel Blend Fuels with Alcohol as Additives*, Malaysian Technical Universities on Engineering and Technology (MUCET 2012), 20-21 November 2012, Perlis.
4. **Amir Aziz**, Rizalman Mamat, Wan Khairuddin Wan Ali, “*Burning Characteristics of AP Based Solid Propellant in Atmospheric Air and Nitrogen Gas*”, Malaysian Technical Universities International Conference on Engineering & Technology (MUiCET 2011), Johor.

5. **A. Aziz** and W.K.W.Ali, "Effect of Oxidizer-Fuel Ratio and Chamber Pressure to the Burning Characteristic of AP/HTPB/AL Composite Propellant" World Engineering Congress, Malaysia, 2-5 August 2010.

List of Books

Amir Aziz and Wan Khairuddin Wan Ali, "Combustion Characteristics of AP Based Solid Rocket Propellant", Verlag Dr. Muller, 2011. ISBN-13/EAN: 9783639371321

Awards / Research / Achievements

1. Silver medal ITEX 2014, "Water and Biodiesel as Emission Control in Diesel Engine".
2. Gold medal CITREX 2014, "Water and Biodiesel as Emission Control in Diesel Engine".
3. Silver medal CITREX 2014, "Rocket Engine for Weather Modification".
4. Silver medal CITREX 2013, "Wireless Igniter System for Solid Rocket Motor".
5. Seoul International Invention Fair (SIIF) 2012, "Zinc Oxide Nanoparticle Synthesis With Furnace Reactor". Silver Medal
6. Bronze medal CITREX 2012, "Compact Turbine Jet Engine".
7. Gold medal in International Ibn Al-Haytham's Al-Manazir Innovation and Invention Exhibition InEx 2011, "Development of High Temperature Combustor System for Automotive Casting Industries".
8. First prize in *Hadiah Penerbitan Agensi Angkasa Negara (ANGKASA)* 2011 in Category V: Academic Thesis in Aerospace Field. Entitle "Combustion characteristics of ammonium perchlorate based solid rocket propellant".
9. Hadiah sanjungan 2012; kategori produk penyelidikan (pameran)
10. Hadiah sanjungan 2012; kategori penerbitan (Journal)_01
11. Hadiah sanjungan 2012; kategori penerbitan (Journal)_02

Google scholar address:

http://scholar.google.com/citations?hl=en&user=oPEtCfsAAAAJ&view_op=list_works&gmla=AJsN-F7m3B3sr31XPX3ISO2_1SNIJeb776QZzqFQ5yR_KfE1HtEBXAoZatw4dE96ZMOI-GKpmF1a_UWII0zi1BzgjdtqYwBtDENqGNtL5HPzb3SB8P-A1yvztc8KPoIO3K5Xos8e-Ng