



Dr. Ftwi Yohaness Hagos (PhD, ME, B.Sc, CEng MIMechE)

Senior Lecturer

Faculty of Mechanical Engineering,

Universiti Malaysia Pahang,

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Google Scholar: <http://scholar.google.com/citations?user=bPj6KZwAAAAJ&hl=en>

Academic Qualification

PhD, Mechanical Engineering, Universiti Teknologi PETRONAS, Tronoh, Malaysia

ME, Mechanical Engineering (Thermal), Delhi College of Engineering, Delhi University, New Delhi, India

B.Sc. (Hons), Mechanical Engineering, Addis Ababa University, Addis Ababa, Ethiopia

Brief Profile

Dr. Ftwi Yohaness Hagos is an academician and researcher currently working as a senior lecturer in the Faculty of Mechanical Engineering and Research Fellow at the Automotive Engineering Centre, Universiti Malaysia Pahang, Malaysia since February 2014. He received his PhD degree from Department of Mechanical Engineering, Universiti Teknologi PETRONAS, Malaysia in January 2014. He received his Master of Engineering degree from Mechanical and Production Engineering Department, Delhi College of Engineering, Delhi University, India in 2005. He received his B. Sc. Degree (hon) from Mechanical Engineering Department, Faculty of Technology, Addis Ababa University, Ethiopia in 2001. He has served as lecturer from 2005 to 2009 and later as Assistant Professor from 2009 to 2010 in the Mechanical Engineering Department, Mekelle University. During his service in Mekelle University, he has assumed different academic and administrative posts for the department and for the university. He has published more than 35 articles in international scholarly journals and conferences. He has also supervised 7 Master thesis, 1 Masters by coursework dissertation, 35 undergraduate final year projects and 4 final year diploma projects. Currently he has 2 PhD, 3 MSc and 5 final year students under his supervision. His area of specialization is internal combustion engines, thermo-fluids and energy and his research interests are in the area of internal combustion engines, combustion, modelling and simulation, optical diagnostics applied to combustion and flow, thermo-fluids, renewable energy, energy resource assessment and automotive engineering. He is an associate member of Society of Automotive Engineers (SAE), member of International Solar Energy Society (ISES) and CEng and Member of Institute of Mechanical Engineers (IMechE), UK. Besides, He is also member of an editorial board for American Journal of Energy Engineering, International Journal of Renewable and Sustainable Energy and Journal of Energy and Natural Resources since 2014. Since January 2015 he is Associate editor-in-chief for the Journal of Mechanical Engineering and Science (JMES).

Working Experiences / Appointment

Academics

- | | |
|-------------------|---|
| 02/2014 - to date | Senior Lecturer, Faculty of Mechanical Engineering, Universiti Malaysia Pahang |
| 08/2009-01/2010 | Assistant Professor, Ethiopian Institute of Technology-Mekelle (EIT-M), Mekelle University, Mekelle, Ethiopia |
| 08/2005-08/2009 | Lecturer, Ethiopian Institute of Technology-Mekelle (EIT-M), Mekelle University, Mekelle, Ethiopia |
| 10/2002-08/2003 | Graduate Assistant, Mekelle University, Mekelle, Ethiopia |

Industry

- | | |
|-----------------|---|
| 07/2008-09/2009 | General Manager, EM-TECH plc, Mekelle, Ethiopia |
| 01/2006-07/2008 | Deputy General Manager, EM-TECH plc, Mekelle, Ethiopia |
| 10/2001-10/2002 | Maintenance Supervisor, Messebo Cement Factory, Mekelle, Ethiopia |

Expert Area

Internal Combustion Engines, Thermo-fluids and Energy Engineering

Research Interest

IC engines; Combustion; Modelling and simulation; Optical Diagnostics applied to combustion; Thermo-Fluids; Renewable Energy; Energy resources; Automotive Engineering

Research Project / Grant

FRGS Research Grant, Project Title: Fundamental Study of Ethanol-Diesel Blend Fuels in Ultra-low Emission Homogeneous Charge Compression Ignition Engine, FRGS 2015-1- 98692, RM236,410, Project Member, (Apply to MOHE).

Leader, PGRS170390 Investigation Of Cyclic Degradation Of Physical-Chemical Properties Of Different Phase Change Materials And Their Impact On The Heat Storage Performance

Member, RDU1703145 OPTIMIZATION OF SOLENOID DRIVER OF HIGH-PRESSURE DIRECT INJECTOR FOR GASEOUS FUEL

Member, RDU172204 Investigation On Thermal Management Of CI Engine Operating With Biofuel

Member, RDU1703323 Complete Combustion valuation of a Newly Formulated Renewable Energy of Solar - Bioresource Fuel

Leader, RDU160393 Syngas generation from thermochemical conversion of locally available biomass waste for automotive

Member, RDU160373 Enhancing Performance and Emission on a Turbocharged Gasoline Engine

Member, RDU160152 Fundamental Study of Nano-Diesel Blend Fuels in Ultra-low Emission Homogeneous Charge Compression Ignition Engine

Leader, PGRS160304 Experimental Investigation of Exhaust Gas Emission from a Common Rail Diesel Engine Operated with Tri-fuel Emulsion (Biodiesel-Alcohol-Diesel) since 2016

Leader, RDU150124 Investigation of Micro-explosion phenomenon in the Combustion of Tri-fuel (Diesel, Biodiesel and Bio-ethanol) emulsion in compression ignition engines FRGS Project

Member, RDU150351 An Auto-ignition study in Engine using HCCI and Carbon Nanotubes

Leader, RDU 150341 Stability and Physico-chemical characteristics of sea water and diesel emulsion (WiDE) for IC Engine Application (**Closed**)

Member, RDU 150342 Performance and NOx emissions of a diesel engine with water injection (**Closed**)

Leader, RDU 1403120 Experimental and Numerical Investigation of Phase Change material as Heat storage from Concentrating Solar collector Since November 1, 2014 (**closed**)

Member, RDU 120116 Combustion Characteristics of Emulsified Biodiesel since May 2014 (**closed**)

Member, RDU 140302 Experimental Study on Exhaust Gas Recirculation (EGR) with Liquefied Petroleum Gas (LPG) on-Board Injection Operating with a Single Cylinder Diesel Engine Since May 2014 (**closed**)

19/01/2010-31/12/2012 Water in diesel emulsion as a fuel in CI engine, Short Term Internal Research Fund (STIRF, UTP) (**Closed**)

19/01/2010-31/12/2013 Exploring Syngas as a fuel in DI SI engine, Internal research fund, UTP (**Closed**)

Professional Qualification / Membership / Affiliation / Experience

a) Membership of Professional Body

1. Member of International Solar Energy Society (ISES): 1110308
2. Member of Ethiopian Society of Mechanical Engineers (ESME): 621
3. Associate Member of Society of Automotive Engineers (SAE): 6135614064
4. Chartered Engineer, Engineering Council of UK: 616531
5. Member of Institute of Mechanical Engineers (IMechE) of UK: 80202616

b) Professional Experience

1. Panel member, Postgraduate Research Proposal Defence, FKM, Universiti Malaysia Pahang, Pekan, Pahang, Malaysia.
2. Panel member, Postgraduate Research progress, FKM, Universiti Malaysia Pahang, Pekan, Pahang, Malaysia.
3. Judge, Mechanical System Design Project completion, December 2015, FKM, Universiti Malaysia Pahang, Pekan, Pahang, Malaysia.

c) Journal's Editorial Board and Proceedings Editor

1. Editor, FKM Bulletin
2. Journal of Mechanical Engineering & Sciences (JMES), (Associate Editor-in-chief), since January 2014.
3. International Journal Editorial Board Member: American Journal of Energy Engineering Since 2014
4. International Journal Editorial Board Member: International Journal of Renewable and Sustainable Energy Since 2014

5. International Journal Editorial Board Member: Journal of Energy and Natural Resources Since 2014
6. Proceeding of International Conference on Mechanical Engineering Research (ICMER 2015), IOP Conference Series: Materials Science and Engineering (MSE), Volume 100, 2015

d) Journal and Paper Reviewer

2017

1. Renewable and sustainable Energy Reviews (3 manuscripts)
2. Journal of energy conversion and management (2 manuscripts)
3. Energy (1)
4. International Journal of Automotive and Mechanical Engineering (IJAME), more than 25 articles
5. Journal of Mechanical Engineering Sciences, more than 30 articles
6. International Journal of Hydrogen Energy (1)
7. Journal of Energy and Natural Resources
8. 6th Asia International Conference on Tribology (ASIATRIB) 2018 (2 manuscript)
9. 10 paper review for the International Conference on Mechanical Engineering Research (ICMER 2017)
10. Energy institute

2016

11. Renewable and sustainable Energy Reviews
12. Journal of energy conversion and management
13. Energy
14. Reviewer for Jurnal Intelek
15. International Journal of Automotive and Mechanical Engineering (IJAME), more than 20 articles
16. Journal of Mechanical Engineering Sciences, more than 30 articles
17. Journal of Energy and Natural Resources (Manuscript Number: 1671003)
18. International Journal of Hydrogen Energy (Manuscript Number: HE-2015-1802)

2015

1. 25 paper review for the International Conference on Mechanical Engineering Research (ICMER 2015)
2. Reviewer for Jurnal Intelek
3. Journal of Combustion (Manuscript Number: 104134)
4. Renewable and Sustainable Energy Reviews (RSER-D-13-00591R2)
5. Renewable and Sustainable Energy Reviews (RSER-D-13-00591)
6. Applied Thermal Engineering, ATE-2015-9625
7. International Journal of Automotive and Mechanical Engineering (IJAME), more than 15 articles
8. Journal of Mechanical Engineering Sciences, more than 30 articles

2014

1. Reviewer for Renewable and Sustainable Energy Reviews (Elsevier) (Manuscript Number: RSER-D-13-01295)
2. 15 paper review for the International Conference on Automotive Innovation and Green Energy Vehicle (AIGEV 2014)

2012

1. Brazilian Journal of Chemical Engineering (Manuscript Number: BJCE-2313)

e) **Conference & Others Professional Experience.**

1. Reviewer, 1st International Conference on Automotive Innovation and Green Energy Vehicle (AiGEV) 2014, 26-27 Aug, UMP Automotive Engineering Centre & Malaysian Automotive Institute (MAI), Kuantan, Malaysia.
2. Member, Publication Group and Reviewer, International Conference on Mechanical Engineering Research (ICMER) 2015, 18-19 Aug, Kuantan, Pahang, Malaysia.
3. Member, Best Paper Selection Committee, International Conference on Mechanical Engineering Research (ICMER) 2015, 18-19 Aug, Kuantan, Pahang, Malaysia
4. Reviewer, UTP-UMP Symposium on Energy Systems (SES) 2015, 7 Oct, Chancellor Complex, Universiti Teknologi Petronas (UTP), Bandar Seri Iskandar, Perak, Malaysia.
5. Member, Publication Group and Reviewer, Innovation and Green Energy Vehicle (AiGEV) 2016, 1-3 Aug, UMP Automotive Engineering Centre & Malaysian Automotive Institute (MAI), Kuala Lumpur, Malaysia.
6. Reviewer, National Conference for Postgraduate Research 2016
7. Member, Publication Group and Reviewer, International Conference on Mechanical Engineering Research (ICMER) 2017, 1-2 Aug, Kuantan, Pahang, Malaysia.

Teaching Experience

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2017/2018 Semester 2
Courses: Applied Thermodynamics (BMM2683) (2 sections (64)),

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2017/2018 Semester 1
Courses: Applied Thermodynamics (BMM2683) (32), Thermodynamics 2 (BMM 2523) (1), Introduction to Automotive Engineering (BMA 2312) (47)

Course Coordinator for Introduction to Automotive Engineering (BMA 2312)

Master of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2017/2018 Semester 1
Courses: Efficient Energy Utilization (MME6123) (6)

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2016/2017 Semester 2
Courses: Applied Thermodynamics (BMM2683) (32), Thermodynamics 2 (BMM 2523) (3), Introduction to Automotive Engineering (BMA 2312) (33)

Course Coordinator for Introduction to Automotive Engineering (BMA 2312)

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2016/2017 Semester 1
Courses: Applied Thermodynamics (BMM2683) (32), Thermodynamics 2 (BMM 2523) (1), Engineering Fluid Mechanics Laboratory (BMM3521) (26), Introduction to Automotive Engineering (BMA 2312) (31)

Course Coordinator for Engineering Fluid Mechanics Laboratory (BMM3521) and Introduction to Automotive Engineering (BMA 2312)

Courses: Efficient Energy Utilization (MME6123) (20)

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2015/2016 Semester 2
Courses: Fluid Mechanics 1 (BMM2533) (49), Engineering Fluid Mechanics Laboratory (BMM3521) (26), Introduction to Automotive Engineering (BMA 2312) (7)

Course Coordinator for Engineering Fluid Mechanics Laboratory (BMM3521) and Introduction to Automotive Engineering (BMA 2312)

Master of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2015/2016 Semester 1
Courses: Efficient Energy Utilization (MME6123) (21)

Course Coordinator for MME6123 Efficient Energy Utilization

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2015/2016 Semester 1
Courses: Fluid Mechanics 1 (BMM2533), Engineering Fluid Mechanics Laboratory (BMM3521), Introduction to Automotive Engineering (BMA 2312)

Course Coordinator for Engineering Fluid Mechanics Laboratory (BMM3521) and Introduction to Automotive Engineering (BMA 2312)

Master of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2014/2015 Semester 2
Courses: MME6123 Efficient Energy Utilization

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2014/2015 Semester 2
Courses: Thermodynamics 1(BMM2513), Thermodynamics (BMM2673), Fluid Mechanics 1 (BMM2533), Engineering Fluid Mechanics Laboratory (BMM3521), MME6123 Efficient Energy Utilization

Course Coordinator for Thermodynamics 1(BMM2513), Thermodynamics (BMM2673) and Engineering Fluid Mechanics Laboratory (BMM3521)

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2014/2015 Semester 1
Courses: Fluid Mechanics 1(BMM2533), Engineering Fluid Mechanics Laboratory (BMM3521) (2 sections)

Course Coordinator for Engineering Fluid Mechanics Laboratory (BMM3521)

Bachelor of Mechanical Engineering (BMM), Universiti Malaysia Pahang, 2013/2014 Semester 1
Courses: Thermodynamics 1(BMM2513), Fluid Mechanics 1 (BMM2533), Engineering Fluid Mechanics Laboratory (BMM3521)

B.Sc. in Mechanical Engineering, Mekelle University (2005-2010)
Courses: Refrigeration and Air conditioning; IC engines and reciprocating machines; Energy resource and Power plant engineering; Heat and Mass Transfer; Fluid mechanics and advanced fluid dynamics; Fluid power systems, Engineering thermodynamics; Turbo machinery; Workshop and Metrology; Dynamics; Strength of Materials.

BSc. In Electronic and Electrical Engineering, Mekelle Institute of Technology (2005-2009)
Mechanics

MSc. In Energy Technology, Mekelle University (2011-2012)
Course: Bioenergy

Masters/PhD by Research Supervision (Main supervisor (M), Co-supervisor (C))

PhD Supervision

1. Anusuiah Vasu (PMM16007) (ongoing) (M)
2. Muhammad Mukhtar Bin Noor Awalludin (PMM16009) (ongoing) (M)
3. HAZMAN BIN ABU HASSAN (PMA14001) (Ongoing) (C)
4. ANES ABDULLA G. MRWAN (PMM16012) (ongoing) (C)

MSc Supervision

1. MD. MAHMUDUL HASSAN (MMM14046) (ongoing) (M)
2. HAZRULZURINA BT SUHAIMI (MMA16005) (ongoing) (C)
3. MOHD FADHIL BIN MD SHUKOR (Terminated) (C)
- 4.

Post Graduate Supervision

1. Noor Huwaida Binti Yahaya, Indoor Air Quality Evaluation of Commercial Buildings in Kuantan, Master of Engineering in Mechanical Engineering, Universiti Malaysia Pahang

Completed MSc Research

1. Yared Mulu Abay , "Design of Electrification Using Solar Energy for Maygeba Town" , MSc in Sustainable Energy Engineering, Royal Institute of Technology (KTH), Stockholm, Sweden, Graduated in 2011
2. Tigist Teshome Ayu, " Energy Audit and Heat Recovery System Design for a dry type rotary kiln: The case of Messobo Cement Factory", MSc in Energy Technology, Mekelle University, Graduated in 2012
3. Michael Gebreyesus Bidr, "Investigation of Small Scale Batch Type Biodiesel Reactor", MSc in Energy Technology, Mekelle University, Graduated in 2012
4. Angesom Gebregziabher, "Gasification Based Injera Baking Stove (Mitad)", MSc in Energy Technology, Mekelle University, Graduated in 2012

5. Eden Tesfaye Gelagle, "Design and Development of Sesam Straw Gasifier Stove", MSc in Energy Technology, Mekelle University, Graduated in 2013
6. Kibrom Gebremedhin, "Modeling and Experimental Study of a Side Charged Phase Change Material for Storage in Solar Cooking Stoves", MSc in Energy Technology, Mekelle University, Graduated in 2013
7. Atkilt Mulu, "Performance of an Enhanced Storage System integrated Solar Drier for Fruits and Vegetable Drying", MSc in Energy Technology, Mekelle University, Graduated in 2013

Degree / Final Year Supervision

- 1.
2. Mohamad Syahmi Bin Musa, B. Eng Mechanical Engineering (Automotive), Universiti Malaysia Pahang
3. Wan Mohd Asyraf Bin Wan Man, B. Eng Mechanical Engineering (Automotive), Universiti Malaysia Pahang
4. Mohammad Syarifuddin Bin Mohammad, B. Eng Mechanical Engineering (Automotive), Universiti Malaysia Pahang
5. Mohd Amiruddin Bin Alias, B. Eng Mechanical Engineering (Automotive), Universiti Malaysia Pahang
6. Wan Muhamad Izzuddin Bin W. Ibrahim, B. Eng Mechanical Engineering (Automotive), Universiti Malaysia Pahang
7. Chan Soon Yin, B. Eng Mechanical Engineering, Universiti Malaysia Pahang
8. Ang Chan Mun, B. Eng Mechanical Engineering, Universiti Malaysia Pahang
9. Abdul Rahim Bin Sakari, B. Eng Mechanical Engineering, Universiti Malaysia Pahang
10. Sintayehu Gashaw and Engidawork Mulatu, "Design of Adsorption cooler using concentrating solar collector", BSc in Mechanical Engineering, Mekelle University, Graduated in 2006
11. Dagne Tilahun, "Design and Manufacturing of Evaporative cooler", BSc in Mechanical Engineering, Mekelle University, Graduated in 2006
12. Nebiyu Hailu and Fikiru Nigussie, "Design and Manufacturing of Biodiesel Reactor", BSc in Mechanical Engineering, Mekelle University, Graduated in 2007
13. Biniam Imi and Adem Jemal, "Manufacturing of dry cooler for household applications", BSc in Mechanical Engineering, Mekelle University, Graduated in 2007
14. Tafesse Kifle and Solomon Tesfaye, "Design and Manufacturing of press machine for oil production", BSc in Mechanical Engineering, Mekelle University, Graduated in 2007
15. Anteneh and Dawit Nugussie, "Design Review and Manufacturing of panel type solar cooker for pastoralists", BSc in Mechanical Engineering, Mekelle University, Graduated in 2008
16. Mahider, "Manufacturing and Testing of bioga burner for injera backing", BSc in Mechanical Engineering, Mekelle University, Graduated in 2008
17. Meles Tadesse and Yosef Hailemariam, "Air conditioning design for Kebire Enterprise Expansion Project Knitwear Section", BSc in Mechanical Engineering, Mekelle University, Graduated in 2009
18. Mebratu Markos and Tesfaye Geleso, "Design of Horizontal Axis Wind rotor for water pumping", BSc in Mechanical Engineering, Mekelle University, Graduated in 2009
19. Betelehem and Serkalem Legasion, "Design and Manufacturing of Solar Injera Backing using Parabolic Trough Collector", BSc in Mechanical Engineering, Mekelle University, Graduated in 2009
20. Haftom Teklu and Mekonnen Messele, "Maintenance plan development of oil injected screw type air compressor and top-head water well drilling machine", BSc in Mechanical Engineering, Mekelle University, Graduated in 2009
21. Dagnachew Alemayoh and Yonatan Akalu, "Design of Briquetting Machine for Manufacturing of Briquettes from urban solid waste", BSc in Mechanical Engineering, Mekelle University, Graduated in 2009

List of Publications

Journal Publication

1. Bahaaddein K. M. Mahgoub, Suhaimi Hassan, S. A. Sulaiman, R. Mamat, A. Abdul Adam and Ftwi Y. Hagos (2017), "Combustion and Performance of Syngas Dual Fuelling in a CI Engine with Biodiesel Blend as Pilot Fuel", *BioResources* 12 (3), 5617-5631
2. Yohannes T. Anbese, Abdul Rashid A. Aziz, Morgan R. Heikal, Ftwi Yohannes Hagos, Firmansyah (2017), "Characteristics of Early Flame Development in a Direct-injection Spark-ignition CNG Engine Fitted with a Variable Swirl Control Valve", *Energies* 10 (7), 964
3. Hazman bin Abu Hassan, Rizalman Mamat, Ftwi Y. Hagos and Gholam Hassan Najafi, "Progress on the application of emulsions as an alternative fuel for diesel engines", under review, *Renewable and Sustainable Energy Reviews Journal*

4. Anusuiah Vasu, Ftwi Y. Hagos, Rizalman Mamat, M. M. Noor Wan Azmi, Corrosion Effect of Phase Change Materials in Solar Thermal Energy Storage Application, *Renewable and Sustainable Energy Reviews Journal*, Volume 76, 19-33, 2017
5. Thamir Ibrahim, Rizalman Mamat, Ftwi Yohannes Hagos, Gholamhassan Najafi, Firdaus Basrawi, Ahmed Abdullah, Omar Awad, Thermal performance of gas turbine power plant based on exergy analysis, *Applied Thermal Engineering*, Volume 115, 25, Pages 977–985, 2017
6. Omar Awad, Rizalman Mamat, Thamir I. Kalil, Ftwi Y. Hagos, M. M. Noor, Calorific value enhancement of Fusel oil by moisture removal and its effect on the performance and combustion of a spark ignition engine, *Energy Conversion and Management*, Volume 137, Pages 86–96, 2017
7. Md Mahmudul Hassan, Ftwi Y. Hagos, Rizalman Mamat, Characterization and performance of Biodiesel as an alternative fuel in diesel engine-A Review, *Renewable and Sustainable Energy Reviews* 72, 497-509, 2017
8. Ftwi Y. Hagos, Obed M. Ali, Rizalman Mamat, Abdul A. Abdullah, “Emulsification versus Blending on the Effect of Fuel Oxygenation and Substitution of Diesel for Compression Ignition Engine”, *Renewable and Sustainable Energy Reviews*, Volume 75, 1281–1294, 2017
9. W.M. Asyraf, Anusuiah Vasu, Ftwi Y. Hagos, M. M. Noor, Rizalman Mamat, “Transient Modelling of Heat Loading of Phase change Material for Energy Storage”, 2nd International Conference on Automotive Innovation & Green Energy Vehicle AiGEV 2016. 1-3, 2016, Cyberjaya, Malaysia
10. Redhwan, A. A. M., Azmi, W. H., Sharif, M. Z., & Hagos, F. Y. (2017). Development of nanolubricant automotive air conditioning (AAC) test rig. In *MATEC Web of Conferences* (Vol. 90, p. 01050). EDP Sciences.
11. Samson M. Atnaw, Lakhveer Singh, Ftwi Y. Hagos, Abu Yousuf, “Road Construction Equipment Management: A Case Study on Selected Industry”, Vol 5 (1) Pp 91-97, *International Journal of Engineering Technology and Sciences*, 2016
12. Ibrahim K. Adam, A.Rashid A.Aziz, Suzana Yusup, Morgan Heikal and Ftwi Hagos, “Optimization of Performance and Emissions of a Diesel Engine Fuelled with Rubber Seed- Palm Biodiesel Blends using Response Surface Method”, Vol 4 (2) *Asian Journal of Applied Sciences*, 2016
13. Ftwi Yohannes Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, “Syngas (H₂/CO) in a Spark-Ignition Direct-Injection Engine: Effect of Injection Timing on Combustion, Performance and Emissions”, *International Journal of Engine Research* 17 (9), 921-933
14. BKM Mahgoub, S Hassan, SA Sulaiman, R Mamat, AA Adam, FY Hagos, “Dual Fuel Combustion in a CI Engine Powered by Blended Diesel-Biodiesel Fuel and Simulated Gasification Gas”, *Journal of Engineering and Applied Sciences* 11 (22), 12947-12952
15. Tigist Teshome Ayu, Mesele Hayelom Hailu, Ftwi Yohannes Hagos, Samson Mekbib Atnaw, “Energy Audit and Waste Heat Recovery System Design for a Cement Rotary Kiln: a Case Study”, Vol 12 Pp 2983-3002, *International Journal of Automotive and Mechanical Engineering*, 2015
16. M. E. Babiker, A. R. A. Aziz, M. Heikal, S. Yusup and F. Y. Hagos, “Aspen Plus Simulation of Fluidized Bed Reactor Using Date Palm Seeds in Steam Gasifier”, in *International Conference in Mechanical Engineering Research*, August 2015, Kuantan, Malaysia
17. Ang Chan Mun, Ftwi Y. Hagos, Rizalman Mamat, Ahmed Nurys Umer, W. H. Azmi, Modelling of Phase Change Material for Energy Storage in Concentrating Solar Thermal Cooking Stove, *International Conference on Mechanical Engineering and Advanced Material* 2015, 3-4 December, 2015, Kota Kinabalu, Sabah, Malaysia
18. Tesfay AH, Hagos FY, Yohannes KG, Nydal OJ and Kaysay MB. Preparing side charging of PCM storage: theoretical and experimental investigation. *IOP Conference Series: Materials Science and Engineering*. 2015; 100: 012021. Doi: 10.1088/1757-899X/100/1/012021
19. Hagos, F.Y., Aziz, A.R.A. and Sulaiman, S.A., 2015. Methane enrichment of syngas (H₂/CO) in a spark-ignition direct-injection engine: Combustion, performance and emissions comparison with syngas and Compressed Natural Gas. *Energy*, 90, pp.2006-2015, doi:10.1016/j.energy.2015.07.031
20. Mahgoub BKM, Sulaiman SA, Karim ZAA and Hagos FY. Experimental study on the effect of varying syngas composition on the emissions of dual fuel CI engine operating at various engine speeds. *IOP Conference Series: Materials Science and Engineering*. 2015; 100: 012006. doi: 10.1088/1757-899X/100/1/012006
21. Dawit Abay Tesfamariam, Mulu Bayray, Meseret Tesfay, Ftwi Yohannes Hagos, “Modeling and Experiment of Solar Crop Dryer for Rural Application”, *International Conference on Recent Advancement in Mechanical Engineering and Technology (ICRAMET 2015)*, April 2015,
22. Ftwi Yohannes Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, “Investigation for deposit formation of a direct-injection spark-ignition engine powered on syngas”, *International Journal of Automotive Technology*, 2015, 16(3):479–485. DOI: 10.1007/s12239-015-0050-1
23. Ftwi Yohannes Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, “Syngas (H₂/CO) in Spark-ignition Direct-injection Engine. Part 1: Combustion, Performance and Emissions Comparison with CNG”, *International Journal of Hydrogen Energy*; 2014, 39; 17884-17895, 10.1016/j.ijhydene.2014.08.141
24. Amir Aziz, Wong Chung Siong, Rizalman Mamat and Ftwi Yohannes Hagos, “Exhaust Emissions Reduction Of Diesel Engine Fueled With Emulsified Palm Oil Methyl Esters”, *Applied Mechanics and Materials*; 2014, 660 (2014); 457-461, 10.4028/www.scientific.net/AMM.660.457

25. Ftwi Yohaness Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, "Effect of Air-fuel Ratio on the Combustion Characteristics of Syngas (H₂:CO) in Direct-injection Spark-ignition Engine", *Energy Procedia*, 2014, 61, 2567–2571, 10.1016/j.egypro.2014.12.047
26. Anwar Mustefa Mahmud, Mulu Bayray Kahsay, Asfafaw Hailesilasiye, Ftwi Yohaness Hagos, Petros Gebray, Hailay Kiros Kelele, et al., "Solar Energy Resource Assessment of the Geba Catchment, Northern Ethiopia", *Energy Procedia*, 2014, 57, 1266 – 1274, 10.1016/j.egypro.2014.10.116
27. Ftwi Yohaness Hagos and A. Rashid A. Aziz, "Mass Fraction Burn Investigation of Lean Burn Lower Calorific Value Syngas in Direct-injection Spark-ignition Engine", *SAE 2014 World Congress and Exhibition*, SAE Technical Paper 2014-01-1336, doi:10.4271/2014-01-1336
28. Ftwi Yohaness Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, "Trends of Syngas as a fuel in internal combustion engines", In the special issue of "Recent Trends in Internal Combustion Engines" in *Advances in Mechanical Engineering Journal*, Volume 2014 (2014), Article ID 401587, doi: 10.1155/2014/401587
29. Mohammed Yahaya Khan, A. K. Zainal Ambri, Ftwi Yohaness Hagos, Abdul Aziz Rashid, and Isa Tan, "Current trends in water-in-diesel emulsion as a fuel", *The Scientific World Journal*, Volume 2014 (2014), Article ID 527472, doi: 10.1155/2014/527472
30. Ftwi Yohaness Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, "Combustion Characteristics of DI SI Engine Fuelled with Producer gas", *Energy Education Science and Technology Part A*; 2013, 31(3); 1683-1698.
31. Anwar Mustefa Mahmud, Mulu Bayray Kahsay, Asfafaw Hailesilasiye, Ftwi Yohaness Hagos, Petros Gebray, Hailay Kiros Kelele, et al., "Solar Energy Resource Assessment of the Geba Catchment, Northern Ethiopia", *Proceedings, Solar World Congress 2013, Cancun, Mexico, 3 – 7 November 2013*
32. Anwar Mustefa Mahmud, Mulu Bayray Kahsay, Asfafaw Hailesilasiye, Ftwi Yohaness Hagos, Petros Gebray, Hailay Kiros Kelele, et al., "Solar Potential in Geba Catchment", *Proceedings of International Congress: Livelihood 2013, Mekelle, Ethiopia, 17-21 September 2013*
33. Mulu Bayray, Anwar Mustefa, Ftwi Yohaness Hagos, Hailay Kiros, Asfafaw Hailesilasiye, Petros Gebray, et al. "Wind Energy Data Analysis and Resource Mapping of Geba Catchment, North Ethiopia", *Wind Engineering* 05/2013; 37(4):333–346, doi: 10.1260/0309-524X.37.4.333
34. Ftwi Yohaness Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, "Early Flame Development Image Comparison of Low Calorific Value Syngas and CNG in SI DI Engine", *International Conference on Energy and Environment*, Putrajaya, Malaysia, 2013, doi: 10.1088/1755-1315/16/1/012070
35. Ftwi Yohaness Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, "Study of Syngas Combustion Parameters Effect on Internal Combustion Engine", *Asian Journal of Scientific Research*, 2013, 6 (2); 187-196, doi: 10.3923/ajsr.2013.187.196
36. Ftwi Yohaness Hagos, A. Rashid A. Aziz and Shaharin A. Sulaiman, "Combustion Characteristics of Late Injected CNG in a Spark Ignition Engine Under Lean Operating Conditions", *Journal of Applied Sciences*, 2012, 12(23), 2368-2375, doi:10.3923/jas.2012.2368.2375
37. Ftwi Yohaness Hagos, A. Rashid A. Aziz and Isa Mohd Tan, "Water-in-diesel emulsion and its micro-explosion phenomenon-review", *International Conference on Fluid Dynamics and Thermodynamics Technologies*, Bali, Indonesia, 2011, IEEE explore digital library, http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6014903&tag=1, doi: 10.1109/ICCSN.2011.6014903
38. Gebrekidan Gebresilasiye and Ftwi Yohaness Hagos, "Bio-energy as alternative renewal energy for sustainable rural development in the case of Ethiopia: "Win –Win" approach", *Tigray Development Symposium*, August 28-29, 2009, Mekelle, Ethiopia
39. Ftwi Y. Hagos and Naveen Kumar, "Fuelling A Small Capacity Agricultural Unmodified Diesel Engine With Macro-Emulsified Ethanol, Diesel & Jatropha Derived Biodiesel: Performance & Emission Study", *14th ISME International conference on Mechanical Engineering in Knowledge age*, December, 2005

Book Chapter

1. Ftwi Yohaness Hagos et al., *Low and Medium Calorific Value Gasification Gases Combustion in IC Engines: Technical Challenges in Combustion Processes*, Editor: Konstantinos Kyprianidis, InTech Publishing, In press

Book Publication

1. Vol. 8, *Journal of Mechanical Engineering & Sciences (JMES)*, 01/06/2015 (Scopus Indexed), Faculty of Mechanical Engineering, Universiti Malaysia Pahang Publisher.
2. Vol. 9, *Journal of Mechanical Engineering & Sciences (JMES)*, 01/12/2015 (Scopus Indexed), Faculty of Mechanical Engineering, Universiti Malaysia Pahang Publisher.
3. Vol. 10 Issue 1, *Journal of Mechanical Engineering & Sciences (JMES)*, 01/06/2016 (Scopus Indexed), Faculty of Mechanical Engineering, Universiti Malaysia Pahang Publisher.

4. Vol. 10 Issue 2, Journal of Mechanical Engineering & Sciences (JMES), 01/09/2016 (Scopus Indexed), Faculty of Mechanical Engineering, Universiti Malaysia Pahang Publisher.

Teaching Module Publication

1. Ftwi Yohanness Hagos, Internal Combustion Engines and Reciprocating Machines, Teaching Material, Mekelle University Press, 2009

Awards / Research / Achievements

1. Bronze Medal, International Conference and Exposition on Inventions by Institutions of Higher Learning (PECIPTA) 2017, indoor stadium complex localized at Kuala Nerus, 7th-9th October 2017
2. Bronze Medal, The 2nd Advanced Innovation & Engineering Exhibition (AiNEX2017), Astaka Hall, UMP Gambang Campus, 3rd May, 2017
3. Gold Medal, Title: Tri-fuel emulsion. A novel fuel for CI engine", Creation, Innovation, Technology & Research Exposition (CITREX) 2017, March 2017 Conference Main Hall, UMP, Malaysia
4. Silver Modal, Title: Phase change materials for domestic energy storage. ", Creation, Innovation, Technology & Research Exposition (CITREX) 2017, March 2017 Conference Main Hall, UMP, Malaysia
5. Special Award, Title: Low Temperature preservation through Novel Materials at no Electricity, International Festival Innovation On Green Technology 2016 (i-FINOG), Supervisor, 15-17 April, 2016, Universiti Malaysia Pahang
6. Gold Medal, Title: INNOVATION NON-POWERED ZERO ELECTRCITY FRIDGE, Creation, Innovation, Technology & Research Exposition (CITREX) 2015, Supervisor, 7~8 March, 2015 Conference Main Hall, UMP, Malaysia.
7. Best paper award, International Conference on Mechanical Engineering Research (ICMER 2015)
8. Special Award UMP 2015 Quality, Editor Journal of Mechanical Engineering and Sciences (JMES), 6 July 2015, UMP, Malaysia.
9. PETRONAS Scholarship by Petronas Education Sponsorship Unit research fellowship in University Technology Petronas, Malaysia, 2010
10. Certificate of Outstanding Performance as "Best Academic Staff" of the Department of Mechanical Engineering at Mekelle University, 2006/2007 Academic year
11. Ethiopian Ministry of Education Sponsorship of Masters Degree Study in India, 2003
12. Ethiopian Government Scholarship for First Degree Education, 1996
13. Very Great Distinction on results of Ethiopian Schools leaving Certificate Examination, 1996

List of Course / Conference Attended

1. Presenter, Advance Energy and Materials (AEM 2017)- Hydrogen Energy, 11-13 September, 2017, University of Surrey, UK
2. Presenter, International conference in Mechanical Engineering Research, August 2017, Kuantan, Malaysia
3. Plenary session chair, International conference in Mechanical Engineering Research, August 2017, Kuantan, Malaysia
4. Presenter, Sustainable Energy Systems Symposium (SES 2016), 22 September, 2016, Universiti Malaysia Pahang, Pekan, Malaysia
5. Presenter, Advance Energy and Materials (AEM 2016)- Hydrogen Energy, 12-14 September, 2016, University of Surrey, UK
6. Presenter and Session chair, 2nd International Conference on Automotive Innovation & Green Energy Vehicle AiGEV 2016. 1-3, 2016, Cyberjaya, Malaysia
7. Trainer, Writing a review paper for High impact factor journal publication, 1 day workshop for Postgraduate students, Faculty of Mechanical Engineering, 22 July, 2016
8. Presenter, International Conference in Mechanical Engineering and Advanced Materials 2015, Kota Kinabalu, Malaysia

9. Presenter, International conference in Mechanical Engineering Research, August 2015, Kuantan, Malaysia
10. Trainee, Advance combustion Modelling using Ansys Fluent, CADIT Consultants, 20-21 August, 2015
11. Trainee, Journal Writing workshop, Universiti Malaysia Pahang, August 10-19, 2014
12. Trainee, Effective Postgraduate Supervision, Universiti Malaysia Pahang, August 18-19, 2014
13. Participant, COMSOL SEMINAR 2014, i-Math Pte Ltd and Universiti Malaya, June 09-10, 2014
14. Trainee, Oil and gas project management course from Total Professor Association (TPA), Universiti Teknologi PETRONAS, November 19-22, 2013
15. Presenter, International Conference on Energy and Environment (ICEE 2013), UNITEN, Kuala Lumpur, March 5-6, 2013
16. Trainee, Short course on biomass to fuels and chemicals, Universiti Teknologi PETRONAS, September 27-28, 2012
17. Presenter, International Conference on Production, Energy and Reliability (ICPER 2012), Kuala Lumpur, Malaysia, 12-14 June, 2012
18. Participant, ISES Solar World Congress, Johannesburg, South Africa, October 2009
19. Presenter, Annual Workshop on Small Scale Concentrating Solar Energy Systems (SSCSES), Pretoria, South Africa, October 11-15, 2009
20. Presenter, Facilitator's Annual Workshop on Master in Sustainable Energy Engineering Worldwide program, Royal Institute of Technology (KTH), Stockholm, Sweden, March 31st- April 5th, 2009
21. Presenter, Annual Workshop on Small Scale Concentrating Solar Energy Systems (SSCSES), Kampala, Uganda 19th September, 2008
22. Presenter, Facilitator's Annual Workshop on Master in Sustainable Energy Engineering Worldwide program, Royal Institute of Technology (KTH), Stockholm, Sweden, April, 2008
23. Presenter, Facilitator's Annual Workshop on Master in Sustainable Energy Engineering Worldwide program, Royal Institute of Technology (KTH), Stockholm, Sweden, 23rd to 27th of April, 2007
24. Presenter, National Workshop on Curriculum Development, MSc Degree in Energy Technology Program, Mekelle University, Mekelle, Ethiopia, October 05-06, 2009
25. Presenter, National Workshop on Curriculum Revision, BSc Degree in Mechanical Engineering Program, Mekelle University, Mekelle, Ethiopia, January 2007
26. Participant, Improving Academic Instructions, one week training given by Mekelle University and Larestein University of Professional Education, The Netherlands in Mekelle, Ethiopia, 12-21, November 2003
27. Participant, Heavy duty machinery maintenance, two weeks training given by REIS Engineering, Mekelle, Ethiopia, January 2002

Communal Activities

Research Community

- 1) Student Advisory team member, Educational Innovation in Motorsport & Automotive (EIMARace 2016) UMP team
- 2) Secretariat, Ethical publication and plagiarism, 1 day workshop for Postgraduate students, Faculty of Mechanical Engineering, 25 July, 2016
- 3) Founder and Academic Liaison Officer (ALO) of IMechE Student Chapter, UMP, 2015
- 4) PIC for Guest speaker invited from IMechE Malaysia Chapter (Ir. Mathew Thomas), 2015
- 5) Public lecture organizer on Precision Machining, 2015

Community Service

1. Motivational talk, Sokolah Kabangsaan Serandu, 26 March, 2016
2. Cleaning and relief distribution for flood affected community in Tanah Merah, Kelantan, Malaysia, January 2015
3. Cleaning school in flood affected area, Maran, Pahang, Malaysia, January 2015