



Dr. AHMED NURYS OUMER
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Academic Qualification

Doctor of Philosophy (PhD)

Department of Mechanical Engineering
Universiti Teknologi PETRONAS (UTP)

M. Sc. in Applied Mechanics

Department of Mechanical Engineering
Addis Ababa University, AAU

B.Sc. Mechanical Engineering

Department of Mechanical Engineering
Addis Ababa University, AAU

Brief Profile

Dr. Ahmed is a senior lecturer currently working at the Faculty of Mechanical Engineering, Universiti Malaysia Pahang, since 2012. He received his BSc and MSc from the Department of Mechanical Engineering at Addis Ababa University (AAU) in 2001 and 2006, respectively, and his PhD from the Department of Mechanical Engineering at Universiti Teknologi PETRONAS (UTP) in 2012. Dr. Ahmed has worked in manufacturing & foundry industries and consultant companies for more seven years before he continue his PhD study. While he was studying PhD, he served as teaching and research assistant at UTP from 2008 to 2012. His research interests are in the areas of Computational Fluid Dynamics (CFD), experimental thermo-fluids, modeling of flow induced fiber orientation in reinforced composites, and finite element analysis.

Working Experiences / Appointment

1. **EDUCATIONAL WORK EXPERIENCES**

Senior Lecturer

Faculty of Mechanical Engineering
Universiti Malaysia Pahang (UMP), Malaysia
December, 2012 to date

Taught courses:

- Advanced Fluid Mechanics (postgraduate)
- Numerical Methods (postgraduate)
- Fluid Mechanics I (undergraduate)
- Fluid Mechanics II (undergraduate)
- Engineering Fluid Mechanics lab (undergraduate)
- Engineering Thermo-Fluid lab (undergraduate)
- Engineering Mechanics lab (under graduate)
- Introduction to Computational Fluid Dynamics (undergraduate)
- Calculus (Undergraduate)

Teaching and Research Assistant

Faculty of Mechanical Engineering
Universiti Teknologi PETRONAS (UTP), Malaysia
2008-2012

Assisted courses:

- Fluid Mechanics (under graduate)
- Thermodynamics (undergraduate)
- Numerical Methods (under graduate)
- Final year project I and II (under graduate)
- Engineering materials (under graduate)

2. INDUSTRIAL WORK EXPERIENCES

Project Engineer

Industrial Projects Service (IPS) Sh. Co.,
2007 - 2008

Production and Technical Head

Pasqua Jusseppe PL. Co.,
2006-2007

Junior Engineer

Akaki Spare Parts and Hand Tolls Sh. Co.,
2001-2006

Research Interest / Expert Area

- Computational Fluid Dynamics (CFD);
- Modeling and experimental study of thermo-fluid problems ;
- multidisciplinary Numerical Modeling and Simulation
- Finite Element Analysis;
- Flow Induced Orientation of Fibers in Fiber Reinforced Composites

Research Project / Grant

- Two Phase Flow and Heat Transfer Models in Micro-channels of Different Geometry for Supersonic CO2 Cooling. RDU 130132, from 01 December, 2013 to 30 October, 2016. ...(Lead Researcher) - Completed
- Development of New Technique to Predict Orientation of Fibers in Short-Fiber Reinforced Hybrid Composites. RDU 130353, from May 25, 2013 to May 25, 2015...(Lead Researcher) – Completed
- Development of In-cylinder Heat Transfer Models in Diesel Engine using Bio-diesel Fuels. RDU15150375, from October 01, 2015 to October 01, 2017 ... (Lead Researcher) – In progress
- Experimental and Numerical Investigation of Phase Change Materials as Heat Storage from a Concentrating Solar Collector, RDU1403120, from 01 Nov 2014 to 30 Oct 2016. ...(Co-Researcher) - Completed
- Pristine Blade Characteristics Concept Emphasizing Mathematical Model Optimization of Floating Undershot Wheel for Pico-hydropower Generators, Rdu140127, From 01 July 2014 to 30 June 2017. ...(Co-Researcher) - Completed
- Development of Control System on Android Platform for Micro Hydro Turbine Configuration. RDU 130305, from May 15, 2013 to May 15, 2015...(Co-Researcher) - Completed
- Low Frequency Modulation of Ultrasonic Guided Wave Method for Small Crack Pipeline Detection. RDU 1303123, from 25 December, 2013 to 24 December, 2015. ...(Co-Researcher) - Completed
- Enhancing the Electrical Discharge Machining of Metallic Reinforced Ceramic Composites. RDU 1303120, from 01 December, 2013 to 30 November, 2015. ...(Co-Researcher) - Completed

Professional Qualification / Membership / Affiliation / Experience

- The International Association for Computational Mechanics (IACM)Member since January 2015
- Chartered Engineer, Institute of Mechanical Engineers (IMechE) – Member since 2015 - Membership number 80243960
- International association of Engineers (IAENG) – Member since August 2016... Membership number 173681

Post Graduate Supervision

1. Thiwaan Rao A/L N. Naidu, Master student, Main-supervisor (UMP) - Graduated
2. Ahmed Yousif Adam Mohammed, Master student, Main-supervisor (UMP) - Graduated
3. Nor Fadilah Binti Yah, Master student, Main-supervisor (UMP) – In progress (Thesis writing stage)
4. Ahmmad Shukrie Bin Md Yudin, PhD student, Co-supervisor (UMP) - Graduated
5. Idris Bin Mat Sahat, PhD student, Co-supervisor (UMP) - In progress

Degree and Diploma / Final Year Supervision

1. Nazarene A/L Nickolas, Main-Supervisor (UMP), Undergraduate - (In-progress)
2. Prasath A/L Moorthy, Main-Supervisor (UMP), Undergraduate - (In-progress)
3. Hong Wei Xian, Main-Supervisor (UMP), Undergraduate - (In-progress)
4. Tan Wei Tat, Main-Supervisor (UMP), Undergraduate - (In-progress)
5. Sarah Atikah, Main-Supervisor (UMP), Under Graduate- (Graduated)
6. Seyd , Main-Supervisor (UMP), Under Graduate- (Graduated)
7. Devandran, Main-Supervisor (UMP), Under Graduate- (Graduated)
8. Voon Foo Chuan, Main-Supervisor (UMP), Under Graduate- (Graduated)
9. Tee Wei Loon, Main-Supervisor (UMP), Under Graduate- (Graduated)
10. Lee Chon Wee , Main-Supervisor (UMP), Under Graduate- (Graduated)
11. Amer Farhan Bin Alias, Main-Supervisor (UMP), Under Graduate- (Graduated)
12. Lee Sing Soon, Main-Supervisor (UMP), Under Graduate- (Graduated)
13. Nur Farahhin Bt Bakar, Main-supervisor (UMP), Under graduate- (Graduated)
14. Nik Mohd Hamidi, Main-supervisor (UMP), Under graduate- (Graduated)
15. Afwan B. Zainuddin, Main-supervisor (UMP), Under graduate- (Graduated)
16. Kong Pu Wei, Main-supervisor (UMP), Under graduate (Graduated)
17. Dickson A/L Gilbert Raj, Main-supervisor (UMP), Under graduate (Graduated)
18. Muhammad Azim Bin Zamri, Main-supervisor (UMP), Under graduate (Graduated)

Thesis and Oral Examination Committees

Level

Number of Trainees

PhD Students	1
Master Students	5

1. Muhammad Nabil Fikri Bin Mohamad (MMM16014), “Investigation on Thermophysical Properties and Thermal-Hydraulic Performance of TiO₂-SiO₂ Nanofluids”, Master by research- Internal examiner for main viva (08/02/2018)

2. Maizatul Asnida Hassan (MMM14041), "Tribological Behavior of Copper (II) Oxide Nanoparticles Based Lubricants to Improve Piston Ring Durability", Master by research- Internal examiner for main viva (06/10/2017)
3. Muhammad Mehedi Hasan (MMM14004), "Numerical Investigation on Combustion, Performance and emissions Characteristics in Homogenous Charge Compression Ignition Engine", Master by research- Internal examiner for main-viva (17/06/2016)
4. Khamisah Binti Abdul Hamid, "Experimental Investigation on Forced Convection Heat Transfer of Water and Ethylene Glycol (60:40) Based TiO₂ Nanofluids", Master by research- Internal examiner for Main-viva (07/01/2016)
5. Khamisah Binti Abdul Hamid, "Experimental Investigation on Forced Convection Heat Transfer of Water and Ethylene Glycol (60:40) Based TiO₂ Nanofluids", Master by research- Internal examiner for Main-viva (07/01/2016)
6. Adnan Mohammed Hussien (PMMM12002), "Heat Transfer Enhancement by Using Nanofluid in the Automotive Colling System", Doctor of Philosophy by research- Internal examiner for Main-viva (10/07/2014)

List of Publications

- "Small scale hydro-power as a source of renewable energy in Malaysia: A review", Renewable and Sustainable Energy Reviews, Vol. 72, 2017.
- "Investigation of thermal-hydraulic performance in flat tube heat exchangers at various tube inclination angles", International Journal of Automotive and Mechanical Engineering, 14, 2017
- "Effect of Stall Strip Position, Size and Geometry on the Lift Coefficient of NACA 001 Aerofoil", MATEC Web of Conferences, 131, 2017
- "Morphology evaluation of ZrO₂ dip coating on mild steel and its corrosion performance in NaOH solution", Material Science and Engineering, 257, 2017
- "Investigation on effect of some operating conditions on flow and heat transfer of supercritical CO₂ in helical coiled tubes via Multilevel Factorial Methodology", Malaysian Journal of Industrial Technology, 2, 2017
- "A new cooling technique for stingless bees hive", MATEC Web of Conferences, 131, 2017
- "A review on improving thermal-hydraulic performance of fin-and-tube heat exchangers", Materials Science and Engineering, 257, 2017
- "State-of-the-Art on Flow and heat transfer characteristics of supercritical CO₂ in various channels", The Journal of Supercritical Fluids, Vol. 116, 2016.
- "Improvement on Particulate Mixing through Inclined Slotted Swirling Distributor in a Fluidized Bed: An Experimental Study", Advanced Powder Technology, Vol. 27 (5), 2016.
- "Air Distributor Designs for Fluidized Bed Combustor: A Review", Engineering, Technology & Applied Science Research, Vol. 6, No. 3, 2016, 1029-1034.
- "Numerical Investigation On Effect Of Immersed Blade Depth On The Performance Of Undershot Water Turbines" MATEC Web of Conference, 2016
- "Numerical and experimental investigation of tensile properties of natural-sand reinforced polypropylene", Applied Mechanics and Materials (AMM) - (Volume 1115) -2015.
- "Numerical prediction of flow induced fibers orientation in injection molded polymer composites", Materials Science and Engineering 100 (1) -2015.
- "Modeling and Experimental Validation of Tensile Properties of Sugar Palm Fiber Reinforced High Impact Polystyrene Composites", Fibers and Polymers, 2014, Vol.15, No.2, 334-339
- "A Study of Fiber Orientation in Short Fiber-Reinforced Composites with Simultaneous Mold Filling and Phase Change Effects", *Journal of Composites: Part B*, 43 (2012) 1087–1094.
- "Numerical Modelling of Non-Isothermal Flow of Fiber Suspensions: Prediction of Fiber Orientation in Three-Dimensional Cavities", *International Journal of Computational Science and Engineering (IJCES)*, vol. 9, No 3, 2014.
- " Numerical Simulation of Fiber Orientation in Simple Injection Molding Processes ", *International Journal of Mechanical & Mechatronics (IJMME)* Vol: 9 No: 9, ISSN: 2077-124X, 2009

- "Numerical simulation of fiber suspension in a two dimensional cavity ", *World Journal of Engineering*, Vol: 8, no. 1, 2011, ISSN 1708-5284, MULTI-SCIENCE PUBLISHING.
- "Numerical and experimental investigation of tensile properties of natural-sand reinforced polypropylene", *Applied Mechanics and Materials (AMM) - (Volume 1115) -2015*
- "A Review of Effects of Molding Methods, Mold Thickness and Other Processing Parameters on Fiber Orientation in Polymer Composites", *Asian Journal of Scientific Research* 6 (3), 401
- "Numerical Analysis of Flow and Heat Transfer Characteristics of CO₂ at Vapor and Supercritical Phases in Micro-Channels", *MATEC Web of Conference*, 2016
- "Numerical and Qualitative Analysis of a Single Particle Behavior in a Shear Driven Flow in Equilateral Triangular Cavity", *Applied Mechanics and Materials* 465, 557-561- 2014
- "Numerical prediction of flow induced fibers orientation in injection molded polymer composites", *Materials Science and Engineering* 100 (1) -2015
- "Numerical Investigation On Effect Of Immersed Blade Depth On The Performance Of Undershot Water Turbines" *MATEC Web of Conference*, 2016

List of Consultancy Services

- CFD Simulation and Verification on Suction Pipe for MMC Oil and Gas - UMP Consultancy & Training Sdn Bhd, Malaysia – 2014
- CFD Investigation on the erosion and temperature distribution in high pressure, high temperature vessel - UMP Consultancy & Training Sdn Bhd, Malaysia - 2016
- FEA & CFD study of heat exchanger for ethylene plant - UMP Consultancy & Training Sdn Bhd, Malaysia 2017

List of Course / Conference Attended

- "Numerical and experimental investigation of tensile properties of natural-sand reinforced polypropylene", *International Conference on Advances in Manufacturing and Materials Engineering (ICAMME 2014)*, 23-25 September 2014, Kuala Lumpur, Malaysia
- "Qualitative Analysis of a Single Particle behavior in a Shear Driven Equilateral Triangular Cavity" *4th International Conference on Mechanical and Manufacturing Engineering (ICME2013)*, 17-19 December, 2013, Kuala Lumpur, Malaysia.
- "A review of Effects of Molding Methods, Mold Thickness and Other Molding Parameters on Fiber Orientation in Polymer Composites", *International Conference On Production, Energy and Reliability (ICPER 2012)* June 12-14, 2012, Kuala Lumpur, Malaysia.
- "Three Dimensional Simulation of Suspension Flow in a Mold Cavity", *Proceedings of ASME 2010 3rd Joint US-European Fluids Engineering Summer Meeting and 8th International Conference on Nanochannels, Microchannels, and Minichannels FEDSM-ICNMM2010* August 1-5, 2010, Montreal, Canada
- " Numerical Simulation of Flow of Fiber Suspensions Using a Three-Dimensional Finite Volume Approach, *3rd Engineering Conference on Advancement in Mechanical and Manufacturing for Sustainable Environment*, April 14-16, 2010
- "Numerical Simulation of Front Evolving Fiber Suspension Flow in Three-Dimensional Cavities", *International Conference On Plant Equipment And Reliability (ICPER 2010)* June 15-17, 2010, Kuala Lumpur, Malaysia.
- "Computational Fluid Dynamics (CFD) Modeling of Effect of Fibers on the Flow Characteristics of Fiber Suspensions", *International Conference on Advances in Mechanical Engineering, ICAME - June 24-25, 2009*, Kuala Lumpur Malaysia