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NAME: PROF. FREDDIE LISWANISO INAMBAO	Position Title: Professor
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EDUCATION

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
<u>Volgograd Polytechnic Institute, USSR</u>	<u>MSc</u>	<u>1981</u>	<u>Mechanical</u>
<u>Volgograd Polytechnic Institute, USSR</u>	<u>PhD</u>	<u>1985</u>	<u>Mechanical</u>

1. Senior Lecturer: University of KwaZulu-Natal Durban, South Africa, 2015.
2. Associate Professor, University of KwaZulu-Natal, South Africa, January 2016
3. Professor to - date

PhD Thesis and MSc Dissertation

- (A) **PhD Thesis: Impact on the parameters of the rotor-piston engine by changing the charge pressure at the inlet and outlet,**
- (B) **30 KN type agricultural general-purpose Crawler Tractor, version of the DT-75M. Special problem: Modernization of change-speed gearbox.**

PUBLICATIONS

BOOK EDITOR

1. Bioethanol Technologies Edited by Freddie Inambao p. cm. Print ISBN 978-1-83968-393-0 Online ISBN 978-1-83968-394-7 eBook (PDF) ISBN 978-1-83968-398-5 <http://dx.doi.org/10.5772/intechopen.91565>, NUMBER OF PAGES 154, PUBLISHED September 1st, 2021
2. Diesel Engines and Biodiesel Engines Technologies, Edited by Freddie Inambao, DOI 10.5772/intechopen.97954, ISBN 978-1-80355-787-8, PRINT ISBN, 978-1-80355-786-1, EBOOK (PDF) ISBN, 978-1-80355-788-5, <http://dx.doi.org/10.5772/intechopen.97954> COPYRIGHT YEAR, 2022, NUMBER OF PAGES 264, PUBLISHED August 17th, 2022,

CO-AUTHOR OF THE FOLLOWING BOOKS:

1. Maroa Semakula, **Freddie Inambao**, Biodiesel, Combustion, Performance and Emissions Characteristics, Series Title: Green Energy and Technology, DOI 10.1007/978-3-030-51166-1 Hardcover ISBN 978-3-030-51165-4 Series ISSN 1865-3529, eBook ISBN 978-3-030-51166-1, Number of Pages XVIII, 140 Edition Number 1 Copyright Holder Springer Nature Switzerland AG © 2020 Publisher: Springer International Publishing <https://doi.org/10.1007/978-3-030-51166-1>

2. Oluwafemi Ezekiel Ige **Professor Freddie Inambao** Dr. Samuel Ilupeju Energy Efficiency in the South African Cement Finishing Plant: Drivers, Barriers and Improvements ISBN: 978-93-89116-41-0 Published by Research India Publications © 2020 Research India Publications. 128 pages Website: www.ripublication.com Published
3. Hilton Maverengo **Professor Freddie L. Inambao** Dr Samuel Ilupeju Energy Efficiency Opportunities for Pulp and Paper Industry in South Africa: Barriers, Drivers and Technical Opportunities ISBN: 978-93-89116-42-7 Published by Research India Publications © 2020 Research India Publications 129 pages Website: www.ripublication.com Published
4. Semakula Maroa, **Freddie Inambao**, Pyrorated Blends, EGR, Experimental Numerical Approach and Performance, LAP LAMBERT Academic Publishing, © 2018 International Book Market Services Ltd, ISBN: 978-613-9-86722-6, www.omniscryptum.com, www.morebooks.de. 52 Pages.
5. Kumaresan Cunden and **Professor Freddie L. Inambao**, Design of a Novel Hydrokinetic Turbine for Ocean Current Power Generation, © 2017 Research India Publications, ISBN: 978-93-87374-23-2, www.ripublication.com
6. Adewumi Gloria Adedayo Professor **Freddie Inambao**, Reducing Noise From Wind Turbines Using Active Noise Control, © 2017 Research India Publications, ISBN: 978-93-87374-16-4 www.ripublication.com
7. Owoputi Adefemi Oluwaniyi, **Professor Freddie Inambao**, Power Generation From Low-Grade Energy Source Using Organic Rankine Cycle Technology, © 2017, Research India Publications, ISBN: 978-93-87374-15-7, www.ripublication.com
8. Justin Edwin Naidoo, **Professor Freddie Inambao**, Modelling, Design and Analysis of a Water Jetpack Powered by an Autonomous Underwater Vehicle System, © 2017 Research India Publications, ISBN: 978-93-87374-11-9, www.ripublication.com
9. Dr. Ntumba Marc-Alain Mutombo **Professor Freddie Inambao** Dr. Remy Tiako Development of Neuro-Fuzzy Strategies for Prediction and Management of Hybrid PV- Proton Exchange Membrane Fuel Cell - Battery Systems, © 2017 Research India Publications, ISBN: 978-93-87388-06-2, www.ripublication.com
10. Tatenda Bvumbe and **Freddie Inambao** Solar Powered Cooling Systems for South Africa *Investigation of absorption cooling* ISBN978-3-639-76852-7, Scholars' Press is a trademark of OmniScriptum GmbH & Co. KG
11. Grace Kiarie and **Freddie Inambao** Energy Efficiency in Motor Vehicle Assembly Plant *Investigation of Energy Utilization in Motor vehicle industries* ISBN-13: 978-3-639-76990-6, ISBN-10: 3639769902, EAN: 9783639769906, Publishing house: [Scholars' Press](http://www.scholarspress.com) Scholars' Press is a trademark of OmniScriptum GmbH & Co. KG; **Number of pages:** 216; **Category:** [Vehicles, Aircraft, Ships, space travel](#) **Website:** <http://www.scholarspress.com>
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13. Andrew C. Eloka-Eboka (Author), **Dr Freddie Inambao** (Editor) “A Book of Biodiesel Fuel: Africa Mesquite Seed Oil, A test of Pyrolysis Experimental Method”, ISBN 978-3-8433-6175-0 LAMBERT Academic Publishing, Germany, 2012.

CHAPTERS IN THE BOOK

1. Rajesh Kumar Saluja, Vineet Kumar, Radhey Sham, Rajneesh Kaushal, Freddie Inambao, Chapter 13 - Performance and Emission Analysis of oxygenated fuel additives: A review, Editor(s): Niraj Kumar, Kaliyan Mathiyazhagan, V. Raja Sreedharan, Md. Abul Kalam, In the book: Advancement in Oxygenated Fuels for Sustainable Development, Elsevier, 2023, Pages 241-261, ISBN 9780323908757. <https://doi.org/10.1016/B978-0-323-90875-7.00001-0>. <https://www.sciencedirect.com/science/article/pii/B9780323908757000010>

2. Maroa S, L. Inambao F. The Influence of Exhaust Gas Recirculation on Performance and Emission Characteristics of a Diesel Engine Using Waste Plastic Pyrolysis Oil Blends and Conventional Diesel [Internet]. Diesel Engines and Biodiesel Engines Technologies. IntechOpen; 2022. Available from: <http://dx.doi.org/10.5772/intechopen.105011> Pages 23 – 48.
3. Pelemo J, Timothy Akindeji K, L. Inambao F, Awogbemi O, Idoko Onuh E. A Comparative Evaluation of Biodiesel and Used Cooking Oil as Feedstock for HDRD Application: A Review [Internet]. Diesel Engines and Biodiesel Engines Technologies. IntechOpen; 2022. Available from: <http://dx.doi.org/10.5772/intechopen.104393> pages 61 - 76
4. Semakula Maroa and **Freddie Inambao** (February 17th 2021). Assessing the Effects of Engine Load on Compression Ignition Engines Using Biodiesel Blends, Internal Combustion Engine Technology and Applications of Biodiesel Fuel, Enhua Wang, IntechOpen, DOI: 10.5772/intechopen.95974. Available from: <https://www.intechopen.com/chapters/75072>
5. Semakula Maroa and **Freddie Inambao** (May 23rd 2020). Effects of Biodiesel Blends Varied by Cetane Numbers and Oxygen Contents on Stationary Diesel Engine Performance and Exhaust Emissions, Numerical and Experimental Studies on Combustion Engines and Vehicles, Paweł Woś and Mirosław Jakubowski, IntechOpen, DOI: 10.5772/intechopen.92569. Available from: <https://www.intechopen.com/books/numerical-and-experimental-studies-on-combustion-engines-and-vehicles/effects-of-biodiesel-blends-varied-by-cetane-numbers-and-oxygen-contents-on-stationary-diesel-engine> pages 118 Published: November 26th 2020. ISBN: 978-1-83968-033-5 Print ISBN: 978-1-83968-032-8. eBook (PDF) ISBN: 978-1-83968-034-2 Copyright year: 2020
6. Adewumi G.A., **Inambao F.**, Eloka-Eboka A., Sharifpur M., Meyer J. (2018) Investigation into the Electrical Conductivity of Carbon Nanosphere-Based Green Nanofluids. In: Sio-Iong Ao • Haeng Kon Kim Mahyar A. Amouzegar (eds) Transactions on Engineering Technologies. WCECS 2017. Springer, Singapore, DOI https://doi.org/10.1007/978-981-13-2191-7_6 Print ISBN 978-981-13-2190-0 Online 25 October 2018, Online ISBN 978-981-13-2191-7 eBook Packages: Engineering, Chapter 6, Pages 71-82. Total no. of Chapters 27, last page 391.
7. Abdusalam Sulaiman, **Freddie Inambao**, Glen Bright, Solar Energy as an Alternative Energy Source to Power Mobile Robots, Robot Intelligence Technology and Applications 2, Series Title: Advances in Intelligent Systems and Computing, Volume 274, 2014, pp 957-969, Copyright: 2014 DOI: 10.1007/978-3-319-05582-4_84, Print ISBN 978-3-319-05581-7, Online ISBN 978-3-319-05582-4, Series ISSN 2194-5357, Publisher Springer International Publishing.

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PUBLICATIONS IN INTERNATIONAL PEER-REVIEWED JOURNALS

Upcoming publications in Press to be published in SCOPUS (NOs 1 and 2)

- | No. | Titles |
|-----|---|
| 1. | GT-Power for Internal Combustion Engine Simulation: A Review |
| 2. | Simulation Analysis of the Impact of Exhaust Backpressure on a Variable Compression Ratio Diesel Engine Performance |

2025 PUBLICATIONS

1. Khanyi, N., Inambao, F. L., & Stopforth, R. (2025). A Comprehensive Review of the GT-POWER for Modelling Diesel Engines. *Energies*, 18(8), 1880. <https://doi.org/10.3390/en18081880> Or: Khanyi, N., Inambao, F. L., & Stopforth, R. (2025). A Comprehensive Review of the GT-POWER for Modelling Diesel Engines. *Energies*, Volume 18; Issue 8; Number: 1880; Pages: 1 – 27; Published: 8 April 2025. <https://doi.org/10.3390/en18081880>; Pages 1 – 27. Published: 8 April 2025. Journals *Energies* Volume 18; Issue 8; 10.3390/en18081880. [file:///C:/Users/26771/Downloads/energies-18-01880%20\(2\).pdf](file:///C:/Users/26771/Downloads/energies-18-01880%20(2).pdf). <https://www.mdpi.com/1996-1073/18/8/1880>. The Energy Journal; ISSN: *Energies* (ISSN 1996-1073) *Energies*, EISSN 1996-1073, Journal: *Energies*, 2025; Volume: 18; Number: 1880
2. Ojo Emmanuel Olufisayo, Freddie Liswaniso Inambao and Riaan Stopforth, GT-Power for Internal Combustion Engine Simulation: A Review, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 46, No. 1 (2025), Page No: 1161 – 1177. Published 24/03/2025.
URL: <https://propulsionejournal.com/index.php/journal>
<https://propulsionejournal.com/index.php/journal/article/view/9008>
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3. N. F. Khanyi, F.L. Inambao & R. Stopforth, Simulation Analysis of the Impact of Exhaust Backpressure on a Variable Compression Ratio Diesel Engine Performance, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 46 No. 1 (2025), Page No: 1178 – 1198. Published 24/03/2025
URL: <https://propulsionejournal.com/index.php/journal/article/view/9009>
H-Index 26. <https://propulsionejournal.com/index.php/journal/article/view/9009/5582>

2024 PUBLICATIONS

4. Freddie Inambao, Rajesh Kumar Saluja, Biodiesel: A Potential Replacement Fuel for Compression Ignition Engines to Meet the Sustainability Criteria, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055 Vol. 45 No. 4(2024), pages 2911 – 2928, Published 18.12.2024. <https://propulsionejournal.com/index.php/journal/article/view/8597/5385>
5. Erikka N. Mokanya, Maduako Emmanuel Okorie, Freddie Liswaniso Inambao, A Review of The Impact of National Carbon Trading on Namibian Electricity, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055 Vol. 45 No. 4(2024), pages 2972 – 2980, Published 18.12.2024. <https://propulsionejournal.com/index.php/journal/article/view/8601/5389>

6. Jacobina Martha Kamati-Endjala, Maduako Emmanuel Okorie, Freddie Inambao, Developing Enhanced Battery Management Systems for Sustainable Energy Use in Namibia, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 45 No. 4(2024), pages 2959 – 2971, Published 18.12.2024. <https://propulsionejournal.com/index.php/journal/article/view/8600/5388>
7. Ellen Etuhole Valombola, Maduako Emmanuel Okorie, Freddie Liswaniso Inambao, Review on The Techno-Economics of Decentralized Hydrogen Production Using Alternative Renewable Energy Sources, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 45 No. 4(2024), pages 2949 – 2958, Published 18.12.2024. <https://propulsionejournal.com/index.php/journal/article/view/8599/5387>
8. Semakula Maroa And Freddie Inambao, The Effects of High Biodiesel Blend Ratios of Waste Plastic Pyrolysis Oil in Compression Ignition Engine Load, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 45 No. 4 (2024), pages 2929 – 2948, Published 18.12.2024. <https://propulsionejournal.com/index.php/journal/article/view/8598/5386>
9. N. F. Khanyi, F.L. Inambao, R. Stopforth, Exploring Noise and Vibration Challenges in Variable Compression Ratio Diesel Engines: Impact, Factors, and Mitigation Strategies, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 4 (2024), Page No. 2396-2410, Published 2024-12-11. <https://propulsionejournal.com/index.php/journal/article/view/8540/5337>
10. Professor Modify Andrew Elton Kaunda and Professor Freddie Liswaniso Inambao, A Semi-Analytical Solution of a Nonlinear Mass-Spring Finite Element Time-Dependent System, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 4 (2024), Page No. 2383-2395, Published 2024-12-11. <https://propulsionejournal.com/index.php/journal/article/view/8539/5336>
11. Professor Freddie L. Inambao, A Review Of The Biodegradability Of Plastics, Journal Of Aeronautical Materials, ISSN: 1005-5053, Vol. 44, Issue-02, 2024, pp. 1-17, Published 2024-08-20. <https://hkcixb.cn/index.php/JAM/article/view/164/163>
12. N. F. Khanyi, F.L. Inambao, R. Stopforth, Emission Reduction In Diesel Engines: A Study On Variable Compression Ratio Systems, Journal Of Aeronautical Materials, ISSN: 1005-5053, Vol. 44, Issue-02, 2024 pp. 18-37. Published 2024-08-20. <https://hkcixb.cn/index.php/JAM/article/view/165/164>
13. Ojo E. Olufisayo and Professor Freddie Inambao, Real-World Applications Of Waste Swine Oil (Pork Lard Waste) Biodiesel: A Review, Journal Of Aeronautical Materials ISSN: 1005-5053 Vol. 44, Issue-02, 2024 pp. 38-61. Published 2024-08-20. <https://hkcixb.cn/index.php/JAM/article/view/166/165>
14. N. F. Khanyi, F.L. Inambao, R. Stopforth, Evaluating The Long-Term Effects Of Varying Exhaust Backpressure On The Durability And Reliability Of Variable Compression Ratio Diesel Engines, Journal Of Aeronautical Materials, ISSN: 1005-5053, Vol. 44, Issue-02, 2024 pp. 62-79, Published 2024-08-20. <https://hkcixb.cn/index.php/JAM/article/view/167/166>
15. Nhlanhla F. Khanyi, Professor Pavel Y. Tabakov, Professor Freddie L. Inambao, A Qualitative Review of Performance Parameters of Aqueous Film Forming Foam, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 45 No. 2 (2024), Page No. 6224 – 6238. <https://propulsionejournal.com/index.php/journal/article/view/6968/4540>

16. Jerusha Joseph, Professor Freddie Inambao. The Case for an Energy Management System Approach for the Airports, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 45 No. 2 (2024), Page No. 6326 – 6334. <https://propulsionejournal.com/index.php/journal/article/view/6976/4547>
17. Dr Idoko E. Onuh and Professor Freddie Inambao, A Study of Extraction Yield and Properties of Some Oil for Biodiesel Application, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 2 (2024), Page No. 6255 – 6264. <https://propulsionejournal.com/index.php/journal/article/view/6970/4542>
18. Kumaresan Cunden and Professor Freddie Inambao, Numerical Simulation of a Vertical Axis Crossflow Helical Hydrokinetic Turbine, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 2 (2024), Page No. 6265 – 6284, <https://propulsionejournal.com/index.php/journal/article/view/6971/4543>
19. Dr. E. I. Onuh, Professor Freddie Inambao, Performing Computational and Experimental Evaluation of Biodiesel in Homogeneous Charge Compression Ignition Using Combined Modula Kinetic and Premixed/Direct Injection Strategy, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 2 (2024), Page No. 6314 – 6325 <https://propulsionejournal.com/index.php/journal/article/view/6975/4546>
20. E. I. Onuh, F.L. Inambao, A Comparative Evaluation of Selected Biodiesel Performance and Specific Emission in Relation to Emission Standard, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 2 (2024), Page No. 6214 – 6223. <https://propulsionejournal.com/index.php/journal/article/view/6967/4539>
21. N. F. Khanyi, F.L. Inambao, R. Stopforth, Optimizing Combustion Processes in Diesel Engines Using Variable Compression Ratio Technology, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 2 (2024), Page No. 6300 – 6313, <https://propulsionejournal.com/index.php/journal/article/view/6973/4545>
22. N. F. Khanyi, F.L. Inambao, R. Stopforth, A Study of Exhaust Gas Recirculation in Diesel Engines, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 2 (2024), Page No. 6239 – 6254, <https://propulsionejournal.com/index.php/journal/article/view/6969/4541>
23. N. F. Khanyi, F.L. Inambao, R. Stopforth, Optimization Strategies for Managing Exhaust Back Pressure in Variable Compression Ratio Diesel Engines, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055, Vol. 45 No. 2 (2024). Page No. 6285 – 6299. <https://propulsionejournal.com/index.php/journal/article/view/6972/4544>
24. Nhlanhla Khanyi and Professor Freddie Inambao* Exploring the Impact of Exhaust Back Pressure on Variable Compression Ratio Diesel Engines: A Critical Review, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 45 No. 1 (2024) Pages: 5051 – 5075. <https://www.propulsionejournal.com/index.php/journal/article/view/5479/3730>
25. Ojo E. Olufisayo, Professor Freddie Inambao, Additives And Blends of Biodiesel Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 45 No. 1 (2024) Pages: 5032 – 5050 <https://www.propulsionejournal.com/index.php/journal/article/view/5478/3729>

26. Hilton Maverengo and Professor Freddie L. Inambao. Energy Analysis Of Pulp Mill Journal Of Aeronautical Materials ISSN: 1005-5053 Vol. 44, Issue-01, 2024 pp. 38-59.
<https://www.hkclxb.cn/article/view/2024/38.pdf>
27. Shadreck Situmbeko, Kris Kumar, and Professor Freddie Inambao, Solar Air Heater With Sensible Thermal Storage Journal Of Aeronautical Materials ISSN: 1005-5053 Vol. 44, Issue-01, 2024 pp. 60-71.
<https://www.hkclxb.cn/article/view/2024/60.pdf>
28. Nhlanhla Khanyi and Professor Freddie Inambao*. Exploring the Impact of Exhaust Back Pressure on Variable Compression Ratio Diesel Engines: A Critical Review, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 45, No. 1 (2024); 5051 – 5075
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29. Rajesh Kumar Saluja, Dekkala Vinay, Narender Singh, Radhey Sham, Freddie Inambao, Optimization and ANN Modelling for Performance and Emissions Prediction of a Biodiesel-Diesel Blend Engine with EGR using Response Surface Methodology, Tuijin Jishu/Journal of Propulsion Technology, ISSN: 1001-4055 Vol.45 No.2(2024), Pages 405 – 438.
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32. Nhlanhla F. Khanyi, Pavel Y. Tabakov, Freddie L. Inambao, A Review Of The Implications Of Polyethylene Plastics When Utilized As Chemical Storage Tanks, Journal Of Aeronautical Materials, ISSN: 1005-5053, Vol. 44, Issue-01, 2024, pp. 178-202,
https://ir.dut.ac.za/bitstream/10321/5320/4/Review_Khanyi_Tabakov_Inambao_2024.pdf
33. Nhlanhla F. Khanyi¹, Pavel Y. Tabakov², Freddie L. Inambao^{3*}, The Impact Of Mild Steel, Stainless Steel, And High-Density Polyethylene On The Foaming Ability And Foam Stability Of Aqueous Film Forming Foam In Aviation, Journal Of Aeronautical Materials, ISSN: 1005-5053, Vol. 44, Issue-01, 2024, pp. 203-222. https://ir.dut.ac.za/bitstream/10321/5319/3/Khanyi_Tabakov_Inambao_2024.pdf

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35. Freddie L. Inambao, Kumaresan Cunden, Design and Numerical Simulation of a Small Scale Helical Cross Flow Turbine, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 44 No. 5

(2023) Pages: 2935-2947. URL: [Design and Numerical Simulation of a Small Scale Helical Cross Flow Turbine | Tuijin Jishu/Journal of Propulsion Technology \(propulsioneerjournal.com\)](#)

36. Lumbumba T-E. Nyamayoka, Freddie L. Inambao, A Review of Vibration Energy Harvesting, Techniques and Applications, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 44 No. 5 (2023), Pages: 2895-2905. URL: [A Review of Vibration Energy Harvesting, Techniques and Applications | Tuijin Jishu/Journal of Propulsion Technology \(propulsioneerjournal.com\)](#)
37. Oyieke Andrew Y. , Professor Freddie L. Inambao, Water Based Hybrid Photovoltaic and Thermal (PV/T) Flat Plate Solar Collectors: Status and Opportunities, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 44 No. 5 (2023), Pages: 3039-3056. URL: [Water Based Hybrid Photovoltaic and Thermal \(PV/T\) Flat Plate Solar Collectors: Status and Opportunities. | Tuijin Jishu/Journal of Propulsion Technology \(propulsioneerjournal.com\)](#)
38. Freddie L. Inambao, Hydrokinetic Energy Conversion Systems and Utilization of River Current for Electricity Generation, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 44 No. 5 (2023), Pages: 2986-2998. URL: [Hydrokinetic Energy Conversion Systems and Utilization of River Current for Electricity Generation | Tuijin Jishu/Journal of Propulsion Technology \(propulsioneerjournal.com\)](#)
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40. Mutombo Jimmy Tshikaya, Freddie Inambao, Harvesting Energy from Ocean Current, Tuijin Jishu/Journal of Propulsion Technology ISSN: 1001-4055 Vol. 44 No. 5 (2023), Pages: 2974-2985 URL: [Harvesting Energy from Ocean Current | Tuijin Jishu/Journal of Propulsion Technology \(propulsioneerjournal.com\)](#)
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93. Kharchenko N. V., **Inambao F. L.**, (1998) Hydrogen Engine for future use, Third Edward A. Bouchet International Conference on Physics and High Technology for Development in Africa, Gaborone, Botswana.
94. **Inambao F. L.**, Mosweu M., (1998) Lean Burn Technology: Energy Saving and clean Environment, Third Edward A. Bouchet International Conference on Physics and High Technology for Development in Africa, Gaborone, Botswana.
95. **Inambao F. L.**, Masike G., (1998) The Effect of Back Pressure on Performance of a Gas Turbine, Third Edward A. Bouchet International Conference on Physics and High Technology for Development in Africa, Gaborone, Botswana.
96. **Inambao F. L.**, (1997) Influence of Exhaust System throttling on Internal Combustion Engine, Botswana Institution of Engineers, Conference on Engineering Resource Management for Sustainable Development, Gaborone, Botswana, pp. 187 – 192.
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99. **Inambao F. L.**, Mosweu M. (1998) Lean Burn Technology, 4th Annual Conference, Botswana Institution of Engineers, Gaborone, Botswana, pp. 187 – 194.

INTERNATIONAL JOURNAL REVIEWER

I am an active and frequent reviewer of the following reputed international peer-reviewed journals:

1. Acta Ecologica Sinica.
2. Applied Energy.
3. Applied Sciences.
4. Atmospheric Pollution Research.
5. Cleaner Engineering and Technology.
6. Data in Brief.
7. Energy Conversion and Management.
8. Energy Conversion and Management: X.
9. Engineering Science and Technology, an International Journal.
10. Environmental Research.
11. Fuel.
12. International Communications in Heat and Mass Transfer.
13. International Journal of Hydrogen Energy.
14. Journal of Materials Research and Technology.
15. Journal of the Taiwan Institute of Chemical Engineers.

16. Materials Chemistry and Physics.
17. Materials Today Communications; Renewable Energy.
18. Renewable & Sustainable Energy Reviews.
19. Scientific African.
20. Sustainable Energy Technologies and Assessments.
21. Thermal Science and Engineering Progress.

TEACHING

(UNIVERSITY OF DURBANWESTVILLE AND UNIVERSITY OF KWAZULU-NATAL)

Year	Course	Hours per week	No. of Students
2003	<i>Alternative Energy Systems ENME4ES</i>	3	20
	Fluid Mechanics 2 MEC 341	4.5	30
	<i>Power Plants MEC332S</i>	3.5	35
	Mechanical Engineering Project – <i>MEC460Y (supervision)</i>	2	1
	<i>Thermodynamics</i>	3	35
	<i>Post graduate supervision</i>	2	1
2004	Design 2 MEC 262S	3.5	30
	<i>Strength of Materials 2 MEC 212S</i>	3.5	45
	Fluid Mechanics 2 MEC 341	4.5	50
	<i>Alternative Energy Systems ENME4ES</i>	3	30
	Energy Management ENME4EM	3	25
	<i>Mechanical Engineering Project – MEC460Y (supervision)</i>	2	5 (3 groups)
	Post graduate supervision	2	1
<i>Thermodynamics</i>	3	40	
	<i>Postgraduate (by Course work /Module)</i>	2	1
2005	Strength of Materials 2 MEC 212S	3.5	60
	<i>Fluid Mechanics 1 ENME2FM</i>	3	75
	Alternative Energy Systems ENME4ES	3	60
	<i>Energy Management ENME4EM</i>	3	63
	Mechanical Engineering Project MEC460Y (supervision)	2	6 (3 groups)
	<i>Post graduate supervision (research)</i>	2	1
	Postgraduate (by Course work /Module)	2	2
2006	<i>Strength of Materials 1 ENME2SM</i>	3	75
	Alternative Energy Systems ENME4ES	3	60
	<i>Energy Management ENME4EM</i>	3	65
	Design and research Project 1&2 – ENME4PD (supervision)		4 (1 group)
2007	<i>Alternative Energy Systems ENME4ES</i>	3	87
	Energy Management ENME4EM	2	80
	<i>Design and research Project 1&2 – ENME4PD (supervision)</i>	2	5 (1group)
	Post graduate supervision		2
2008	<i>Alternative Energy Systems ENME4ES</i>	3	50
	Energy Management ENME4EM	3	65 students
	<i>Design and research Project 1&2 – ENME4PD (supervision)</i>		12 students (3 groups)
	Heat and Mass Transfer ENME3HM	5	100 students
2009	Alternative Energy Systems ENME4ES	3	49
	Energy Management ENME4EM	3	60
	<i>Design and research Project 1 – ENME4PD (supervision)</i>	3	4

	Heat and Mass Transfer ENME3HM <i>Design and research Project 2 – ENME4PD (supervision)</i>	5 3	60 4
2010	<i>Design and research Project 1&2 – ENME4PD (supervision)</i> Alternative Energy Systems ENME4ES Post graduate supervision.	3 3 14	4 30 7(2PhD+5MSc Students)
2011	<i>Alternative Energy Systems ENME4ES</i> Design and research Project 1&2 – ENME4PD (supervision) Post graduate supervision. Energy Management ENME4EM	3 3 14 3	20 4 10 students 20
2012	<i>Alternative Energy Systems ENME4ES</i> Design and research Project 1&2 – ENME4PD (supervision) Post graduate supervision (MSc and PhD) Energy Management ENME4EM	3 6 14 3	37 8 students (2 groups) 11 students 21
2013	<i>Alternative Energy Systems ENME4ES</i> Design and research Project 1&2 – ENME4PD (supervision) Post graduate supervision (MSc and PhD)	3 6 15	30 8 students (2 groups) 14 students (6 PhD and 8 MSc)
2014	<i>Alternative Energy Systems ENME4ES</i> Design and research Project 1&2 – ENME4PD (supervision) Energy Management ENME4EM Post graduate supervision (MSc and PhD)	3 6 3 15	30 8 students (2 groups) 21 14 students
2015	<i>Alternative Energy Systems ENME4ES</i> Design and research Project 1&2 – ENME4PD (supervision) Post graduate supervision (MSc and PhD) Energy Management ENME4EM Post- Doctoral/Scholar Supervision	3 6 15 3 6	41 8 students (2 groups) 16 students 66 2 Researchers
2016	Post graduate supervision (MSc and PhD) Design and research Project 1and 2 – ENME4PD (supervision) Energy Management ENME4EM Post- Doctoral/Scholar Supervision Research Associate Supervision	16 6 3 6 3	25 8 students (2 groups) 60 2 Researchers 1 Researcher
2017	<i>Alternative Energy Systems ENME4ES</i> Materials Strength Design and research Project 1&2 – ENME4PD (supervision) Energy Management ENME4EM Post graduate supervision (MSc and PhD) Post- Doctoral/Scholar Supervision Research Associate Supervision	3 3 6 3 16 2 3	50 61 23 students (2 groups) 50 24 2 Researchers 1 Researcher
2018	<i>Alternative Energy Systems ENME4ES</i> Materials Strength Design and research Project 1&2 – ENME4PD (supervision) Energy Management ENME4EM Post- Doctoral/Scholar Supervision Research Associate Supervision Postgraduate supervision (MSc and PhD)	3 3 16 3 3 3 20	50 61 8 students (2 groups) 41 ! Researcher 1 Researcher 25 students
2019	Alternative Energy Systems ENME4ES Design and research Project 1&2 – ENME4PD (supervision) Thermo-fluids	3 3 3	40 4 students (1 group) 120

	Energy Management ENME4EM	3	32
	Post- Doctoral/Scholar Supervision	9	3 Researchers
	Research Associate Supervision	3	1 Researcher
	Postgraduate supervision (MSc and PhD)	20	26 students
2020	Alternative Energy Systems ENME4ES	3	35
	Design and research Project 1&2 – ENME4PD (supervision)	6	4 (2 groups)
	Post- Doctoral/Scholar Supervision	9	3 Researchers
	Research Associate Supervision	3	1 Researcher
	Postgraduate supervision (MSc and PhD)	22	26 students
2021	Alternative Energy Systems ENME4ES	3	40
	Design and research Project 1&2 – ENME4PD	6	8 students
	Post-Doctoral/Scholar Supervision	6	2
	Research Associate Supervision	3	1
	Postgraduate supervision (MSc and PhD)	22	26
2024	Postgraduate supervision (MSc and PhD)	18	6 Students
	Design and research Project 1&2 – ENME4PD (Supervision)	3	4 Students
2025	Postgraduate supervision (MSc and PhD)	18	6 Students
	Design and research Project 1&2 – ENME4PD (Supervision)	3	3 Students

SUMMARY COURSES TAUGHT /TEACHING AT UNIVERSITY OF DURBAN WESTVILLE AND

UNIVERSITY OF KWAZULU-NATAL

1. Alternative Energy Systems (2004 – 2021)
2. Fluid Mechanics (2003 – 2005)
3. Power Plants (2003)
4. Thermodynamics (2003-2004)
5. Strength of Materials {2004-2006}
6. Energy Management (2003 – 2021)
7. Materials Strength (2017-2018)
8. Heat and Mass Transfer (2008-2009)
9. Mechanical Engineering Projects/ Design and Research Projects 1 and 2 (2003-2025)

SELECTED UNDERGRADUATE DESIGN RESEARCH TOPICS SUPERVISION

1. Development of the Solar Drying System for Drying Agricultural and Marine Products
2. Performance characteristics of a Gas Turbine operating under variable pre-compressed inlet temperatures
3. The Effects of Exhaust Gas Recirculation on Spark Ignition Engine
4. Design, construction and testing of a Joggle Pump
5. Performance of a Honda Spark Ignition Engine equipped with an Exhaust Gas Recirculation System
6. Experimental study of the Advanced Solar Drying System for Marine and Agricultural Products
7. Design and construction of a start-up system for a prototype Boiler

8. Design of a solar water heater as an application of Helio-thermal technology
9. Design and Optimisation of a Solar Water Heater for a Swimming Pool
10. Design of a domestic solar water heating system
11. Advanced design and optimisation of a solar heater for a swimming pool
12. Design a Wind turbine blade
13. Design of an integrated solar dryer for Agriculture, marine and laundry applications
14. Off-grid Solar Pumping System
15. Design of a Water Tube Boiler System
16. Mini Baja design, testing and competition.
17. Hybrid Golf Cart
18. Deep-sea power
19. Hydrokinetic Power Generation
20. Green Building
21. Small-Scale Gasification
22. Pumped Storage Power Plant

OVERALL GOALS AND OBJECTIVES OF MY PROJECTS ARE:

- ***ORGANIC RANKINE CYCLE POWER GENERATION:***
 - Development of an integrated solar thermal organic Rankine cycle electricity system
 - Simulation of the system
 - Optimization of organic Rankine power cycle for integration with a collector solar field
 - Conduct/investigate a performance analysis of instances
 - engineering and economic feasibility studies

- ***MODELLING, OPTIMIZATION AND EVALUATION OF A HYBRID SOLAR BIOMASS SYSTEM FOR DISTRIBUTED GENERATION OF ELECTRICITY:***
 - To study the current energy situation and current energy systems, and available models of energy systems.
 - Resource assessment for both solar and municipal solid waste
 - Further development of the conceptual framework of the hybrid system to get an optimal system configuration.
 - Design and selection of relevant components and devices for the system
 - Selection and familiarization with relevant software for modeling and optimization of energy systems
 - To carry out energetic and exergetic analysis of system components and the system as a whole
 - To determine the output of each system component under specified conditions
 - Modeling and optimization of the system for optimum efficiency, reduced emissions, and increased reliability

- ***DEVELOPMENT OF COOLING AND HEATING SYSTEM:***
 - Investigate and optimize combined solar-assisted space heating and air conditioning systems.
 - Model simulation and optimization
 - Determine load characteristics.

- Determine the technical and economic effectiveness of the cooling system.
- ***DEVELOPMENT OF WATER PHOTOVOLTAIC SYSTEM FOR POWER GENERATION:***
 - Design the water-cooling photovoltaic system.
 - Research and determination of the optimal operating point of a system
 - Control of the temperature of the system and electrical energy production
 - Simulation of a complete system using TRNSYS
 - Optimization of system parameters e.g., collector type, heat exchanger, etc
 - Construction and performance analysis
 - Validation of the simulation results against experimental results.
- ***DEVELOPMENT OF A SELF-SUSTAINED AND ZERO CO₂ EMISSION HYBRID ENERGY SYSTEM TO COVER ELECTRICAL AND THERMAL ENERGY NEEDS OF RESIDENTIAL AND COMMERCIAL BUILDINGS:***
 - Develop a renewable energy system to cover a building contingent electrical and heating loads
 - Develop a conversion of excess energy from renewable energy systems to hydrogen for storage.
 - To investigate the uses of hydrogen as a green fuel from renewable energy systems
- ***NUMERICAL WIND ASSESSMENT OF KWAZULU-NATAL FOR ANNUAL ENERGY PRODUCTION PREDICTIONS:***
 - Determine whether sufficient wind resources exist in the region to justify further site-specific investigations.
 - Determine potential sites to establish wind monitoring stations for future wind resource assessment programs.
 - Compare areas to distinguish relative development potential.
 - Obtain representative data for estimating the performance and economic viability of wind farms using manufacturer data.
 - Predict annual energy production capacity using various wind turbine models for grid scale electricity production.
 - Screen for potential wind turbine installation sites.
- ***INVESTIGATION OF POWER HARNESSING CAPABILITIES OF EMBEDDED PIEZOELECTRIC GENERATORS:***
 - Develop a device that can generate electricity by vehicle motion
 - To model the Piezoelectric generation system
 - To design a device.
 - construction of the device
 - To carry out experiments of the device in real-world application.
- ***DEVELOPMENT OF ALTERNATIVE ENERGY SOURCES FOR MOBILE ROBOT PLATFORMS:***

- To investigate alternative power sources and implement the new power source into the current systems.
 - Develop a pre-prototype storage system that would store more energy on board a mobile robot platform than current conventional energy storage methods.
 - To study the internal temperature of a fuel cell to the power output and establish a relationship between the cooling load and the power produced.
 - To study on the strength of materials that have been exposed to high-pressure or liquid hydrogen over an extended period of time, or that have been processed moulded, welded, or undergone surface modifications), and exposed under certain temperatures.
 - Use the model to predict suitable design parameters.
 - Build and test the optimized model onboard the mobile robot platform.
 - Economic analysis, using Six Sigma for product cost estimation and test strategy.
- ***HARNESSING WIND ENERGY THROUGH HORIZONTAL AXIS WIND TURBINE:***
 - To design and develop the new diffuser assembly strong enough to stand strong winds also substantially maintain the efficiency of the HAWT without increasing the size of the whole system.
 - To reduce the size of the blades hence reducing the size of the whole system
 - To design new blades with imbedded truss structure to give extra strength and durability within the design norms of aerofoil of the blades.
 - Introducing the new swash plate assembly to control the pitch of the blade (swash plate which is used to control the pitch of the helicopter's blades)
 - sensor-controlled yaw system to orient the turbine in the direction of the wind.
 - To introduce high-speed tripping device to trip the whole system before any failure or disaster. this system consists of brake assembly mounted on the main shaft of the turbine with tachometer and sensor to monitor and regulate the speed of the turbine within limit.
 - Implementation of the electronic automated gear box (with solenoid switch to shift gears) to get the desired gear ratio to drive the alternator at desired r.p.m.
- ***PRODUCTION, EVALUATION AND TESTING OF BIODIESEL FUELS: A CASE STUDY OF MORINGA OLEIFERA SEED OIL:***
 - To investigate the possibility of producing biodiesel from *Moringa oleifera* seed oils obtained from either the Nigerian or South African environment/ ecosystem
 - To manipulate different strategies and methods relative to the transesterification process using methanol and NaOH or KOH or other replaceable hydrogen of metallic salts as catalysts at different ratios and proportions for optimization
 - To perform comparative evaluation and analysis of the biodiesel fuel and blends produced: This includes extraction methods, chemo-physical analysis, thermal analysis, gaseous emissions, and engine performance tests.
 - To set the ball rolling for the commercialization of biofuels from *Moringa* which may comfortably replace or compete favorably with fossil fuels and other first-generation non-fossil fuels like.

Signed

Date

A handwritten signature in blue ink, appearing to read 'ff bar.', is written over a horizontal line.

Professor Freddie Liswaniso Inambao

24th APRIL 2025