Curriculum vitae

Ernest A. Odhiambo, Ph.D., MSFPE, MCIBS

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Profession: Mechanical Engineering

Bias: Computational Fluid Dynamics (CFD) Modelling of;

Fire Smoke Propagation Simulation | Fluid/structure interaction

Fire CFD Practitioner Experience (Kenya) – highlights

- Fire Protection, Smoke Propagation Egress Simulation for TDB
- Fire Protection, Smoke Propagation Simulation for Laico Regency
- Fire Protection, Smoke Propagation, Egress Simulation for Hyatt Place
- Computational Aerodynamic Modelling Vehicle Drag for ISUZU East Africa
- Numerical (Computational) Optimization of Sony Sugar Company Thermal Plant, Awendo

Current Research Projects

- Evaluation of Smoke Extraction in Multi-Storey Buildings Using Numerical Methods (Kenya)
- Numerical Simulation of INVELOX (ducted) Wind Turbine (Jordan)
- Numerical Simulation Model of a Greenhouse (Kenya)
- Numerical simulation of floating wind turbine mooring support project (Taiwan)

Professional skills – High Performance Computing

- **Fire Dynamics Simulator©**
- **FireFoam©**
- **OpenFoam©**
- **Ansys Fluent©**
- **C++**
- **AutoCAD – AutoDesk©**
- **Revit - AutoDesk©**
- **SolidWorks**
- **Parallel Programming**
- **LES and RANS Turbulence Modelling**

Academic (Teaching) Experience

Lecturer - University of Nairobi (Dept. of Mech. Eng.) – 2016 - current

- Visiting Lecturer, University of Namibia, Faculty of Eng & Info Tech – 2019
- Tutorial fellow - University of Nairobi (Dept. of Mech. Eng.) – 2009 - 2016
- Teaching - private tutorial classes (face-to-face & online) – 2004 - 2009

Demonstrator – Queen Mary University of London – 2002 – 2004

Courses taught at Dept. Mech. Eng. University of Nairobi

- FME 678 – Computational Fluid Mechanics (Masters) - 2016
- FME 531 – Fluid Mechanics V – Current
- FME 431 – Fluid Mechanics III – Current
- FME 332 – Fluid Mechanics II – 2009 – Current

Administrative duties at Dept. of Mech. Eng. UoN

- Coordinator for Thermo-Fluids Masters programme
- Member of Job Evaluation Analysis sub-committee for Salary and remuneration commission
- Examinations officer – 2010
- Curriculum development Dept. of Mech. Eng.

Education

- **Fire Protection Plan (FPP) Certification – Occupational Safety & Health Academy (OSHA-724144)**
- **PhD – Mechanical Engineering –**National Taiwan University of Science & Technology –D10203801)
- **MPhil** – **Mechanical Engineering** – Queen Mary University of London, UK, (Alumni: P00075920)
- **BSc** – **Mechanical Engineering** – University of Nairobi

Published and Reviewed Articles

Published Kariuki, A, Odhiambo E. 2021. "*Assessment of Implementation of Energy Efficiency Measures, Savings Achieved and Barriers to Implementation at Various Firms in the Hospitality Industryin Kenya*". International Journal of Engineering and Advanced Technology (IJEAT). 10(4):10-23.

Published "*Numerical simulation of vibration of horizontal cylinder induced by progressive waves.*" (Ming-Jyh Chern, E A Odhiambo, Tzyy-Leng Horng and A G L Borthwick): Fluid Dynamics Research. 2016;48(1):15008

- **Published** "*Numerical study of flow past two counter rotating cylinders using immersed boundary method.*" (Ming-Jyh Chern1, Farida Rehmawati Purnadiana, Dedy Zulhidayat Noor, Tzyy-Leng Horng, Shiu-Wu Chau and Ernest Odhiambo): Journal of Marine Science and Technology -Taiwan. 2015;23 (5):761-773.
- **Published** "*Incompressible smoothed particle hydrodynamics modeling of thermal convection.*" (Moballa B, Chern M-J, Odhiambo E) In: Interaction and Multiscale Mechanics. 2013;6 (2):211-235.
- **Presented** "*Numerical Assessment of Three Flexibly Mounted Rotary Wave Energy Converters With a Two Degree of Freedom Constraint.*" (E A Odhiambo) In: *2nd Asian Wave and Tidal Energy Conference.* Tokyo, Japan; 2014.
- **Presented** "*Direct forcing immersed boundary simulation for lock-in phenomena and assessment for renewable energy.*" (E A Odhiambo) In: The 12th International Conference on Fluid Control, Measurements, and Visualization. Nara, Japan; 2013.
- **Reviewer** "*Aircraft Engineering and Aerospace Technology Journal.*"

Conferences and Workshops

- Fire & Evacuation Modelling Technical Conference (FEMTC 2020) – **online, September 9th 2020**
- Industrial academia partnership workshop. April 2018 – Royal Academy of Engineering (RAE) grant University of Namibia, **Ongwediva**, **Namibia.**
- 2nd Asian Wave and Tidal Energy Conference. **Tokyo, Japan**: July 30th 2014 – Presenter for "Direct forcing immersed boundary simulation for lock-in phenomena and assessment for renewable energy".
- 12th International Conference on Fluid Control, Measurements, Visualization. **Nara, Japan**: 2013 – Presenter for "Numerical Assessment of Three Flexibly Mounted Rotary Wave Energy Converters With a Two Degree of Freedom Constraint"

Professional Body

Society of Fire Protection Engineers (**SFPE**); Combustion Institute British Section (**CIBS**); Eng. Board Kenya

Referees

- Mr. Govind Gopal – Hyatt Place, Nairobi - (govind.gopal@kaysalt.com)
- Mr. Jean-Paul Lagaly – Director Building Systems, Hyatt Hotels- (jean-paul.lagaly@hyatt.com)
- Dr. Reuben Kivindu –Dept. Mech. Eng., Univ. of Nbi –(rkivindu@uonbi.ac.ke)