

Dr. Christiaan Adika Adenya (D.Eng)

P. O. Box 17665 – 00100 GPO, NAIROBI. KENYA.

E-mail: adika@eng.jkuat.ac.ke, cadenya@yahoo.com

Mobile: +254 733 750 176

PERSONAL DETAILS

Gender	Male	Date of Birth	22/10/1975
Citizenship	Kenya	ID Number	13576474
Passport Number	BK093327		
Profession	Mechanical Engineering/Naval Architecture		

CAREER OBJECTIVE

To be an engineer involved in academia, research, management, consultancy and policy development so as to contribute to generation and application of engineering knowledge to the betterment of society and achievement of organizational, national and global goals.

PERSONAL STATEMENT

I am result-oriented, responsible and can work with minimum or no supervision. I am both a team player and a team leader. I am work and integrate well with other people. I honour integrity and trust among colleagues.

EDUCATIONAL BACKGROUND

- **Doctor of Engineering in Design and Construction of Naval Architecture and Ocean Structure.** Harbin Engineering University, China. Academic advisor - Prof. Ren Huilong. Thesis: “Study on Springing Response and its Effect on Fatigue Strength of Very Large Ore Carrier” – 2016.
- **Master of Science in Mechanical Engineering (Design and Production).** Jomo Kenyatta University of Agriculture and Technology, Kenya. Academic advisor - Prof. John Muniu Kihii. Thesis: “Stress Characterization in Thick Walled Cylinders with Elliptic Cross-Bores” – 2010.
- **Bachelor of Science in Mechanical Engineering, First Class Honours.** The University of Nairobi, Kenya. Academic advisor - Prof. Felix Makau Luti. Project: “Hybrid Solar/Biomass Air Heater: Assembly, Testing and Commissioning” – 2000.
- **Kenya Certificate of Secondary Education.** Kakamega High School, Kenya. KCSE A (Plain) – 1993.
- **Kenya Certificate of Primary Education.** Hambale Primary School, Kenya. KCPE.

PROFESSIONAL AFFILIATION

Engineers Board of Kenya: Graduate Engineer, 2008. Registration No. B4778.

The Institution of Engineers of Kenya: Graduate Member, 2019. Membership No. G.7423.

WORK EXPERIENCE

A. Jomo Kenyatta University of Agriculture and Technology, Nairobi, Kenya: 12/2003 to date:

- **Chairman, Department of Marine Engineering and Maritime Operations:** 03/04/2018 to date: The academic and administrative head of the department. Charged with

coordinating the day to day running of the department and the academic programs in the department. Charged with ensuring proper and acceptable standards of teaching and research in the department. Chair of departmental boards. Represent the department in University committees. Charged with evaluation of staff in the department. The executive officer of the department as regards implementation of university and departmental policies.

Notable achievements: Completion of review on BSc Marine Engineering Curricula. Completion of new curricula: BSc. Naval Architecture and Ocean Engineering, BSc. Nautical Science. Accreditation of BSc. Marine Engineering by Engineers Board of Kenya. Implementation of the Physical Fitness Training centre on Campus.

- **Acting Dean, School of Mechanical, Manufacturing and Materials Engineering:** 24/06/2019 to 12/08/2019: The academic and administrative head of the School. Oversee Academic Programs in four departments under the School. Handle Student Complaints. Represent the School in University committees. Chair of School boards. Chair of school postgraduate committee and school postgraduate examination board.
- **Member, University Website Management Committee:** 09/2017 to date. Responsible for improving the webometric ranking and general outlook of the University website.
- **Class Advisor:** 2018 to date: BSc. Marine Engineering Year 1. Guiding the students on their academics, social and personal life issues.
- **Examinations Officer, Department of Marine Engineering and Maritime Operation:** 09/2017 to 05/2018. Responsible for ensuring examination schedules are adhered to. Oversee examination setting, moderation, scheduling, invigilation, marking and results processing and presentation.
- **Acting Chairman, Department of Marine Engineering and Maritime Operations:** 16/12/2016 to 30/01/2017. In-charge of the management and administrative duties. Coordinating the day to day running of the department and the academic program in the department.
- **Program Coordinator, Naval Architecture and Ocean Engineering:** 12/2016 to date. To spearhead the curriculum development, teaching, research, equipment acquisition and coordinate the setting up of the program.
- **Lecturer, Department of Marine Engineering and Maritime Operation:** 12/2016 to date. Teaching of undergraduate and postgraduate students, supervision of postgraduate research students, review of postgraduate research proposals, examination of postgraduate thesis reports, curriculum development and review, and various departmental administrative duties, member of postgraduate boards (Department, School, College).
- **Assistant Examinations Officer, Department of Marine Engineering and Maritime Operation:** 11/2016 to 08/2017. Responsible for assisting the examinations officer in ensuring examination schedules are adhered to, coordination of examination setting, moderation, scheduling, invigilation, marking and results processing and presentation.
- **Assistant Lecturer, Department of Mechanical Engineering:** 02/2010 to 11/2016. Undertook teaching roles. Pursued studies and research for PhD degree in Design and Construction of Naval Architecture and Ocean Structure at Harbin Engineering University, China.
- **Final Year Projects Coordinator:** 09/2017 to 07/2019. 5th year students BSc Marine Engineering. Guiding students in preparing research proposal, project design, fabrication and testing. Oversee the project oral and demonstration presentations and evaluation.

- **Teaching Assistant, Department of Mechanical Engineering:** 12/2003 to 01/2010. Undertook studies for Master of Science degree in Mechanical Engineering at JKUAT.
- **External Attachments Coordinator:** Department of Mechanical Engineering. From 10/2009 to 06/2011. Assisting student with external industrial attachment placements. Schedule for student evaluation.
- **Industrial Trips Coordinator:** Departments of Mechanical and Mechatronic Engineering, from 05/2008 to 12/2009. Contacting industries for industrial visits for the students and facilitating the visits.

B. Industrial Promotion Services (Kenya) Limited: 06/2001 to 11/2003.

1. **Group Environmental Officer.** 07/2003 to 11/2003. In-charged of environmental, health and safety policy formulation and implementation; and coordination of the environmental, health and safety issues for IPS (K) Ltd group of companies.
2. **Management Trainee.** Executed various management responsibilities at different IPS (K) companies:
 - **Plastics and Rubber Industries Limited:** 10/2002 to 06/2003: Management trainee in-charge of factory machinery maintenance, production planning and environment, health and safety.
 - While at Plastics and Rubber Industries Limited, I also designed the factory machine layout for the new **Kenya Litho Limited** that was constructed at Mlolongo, Athi River.
 - **Wire Products Limited:** 08/2002 to 10/2002: Management trainee in-charge of environment, health and safety.
 - **Allpack Industries Limited:** 06/2001 to 07/2002: Management trainee in-charge of production planning and product development in the polypropylene bags division. I did factory layout design and expansion proposals and coordinated new machine installations.

C. Kilifi Plantations Limited: 09/1999 to 11/1999. **Industrial Practical Attachment.** Automotive engine and auto-electrical practice; welding; monitoring and maintenance of boilers, compressors, pumps; and machining operations (turning, drilling, milling, and planing).

RESEARCH AND TEACHING INTERESTS

Research Interests: Structural Mechanics; Structural Strength Analysis of Ship and Offshore Structures; Wave Loads; Ship Hydroelasticity; Ship Model Design and Experimental Tests, Numerical Analysis, Materials Testing and Fracture Mechanics.

Teaching Subjects: Engineering Mechanics, Solid and Structural Mechanics, Mechanical Failures and Fracture Mechanics, Non-Destructive Testing, Naval Architecture, Marine Structures, Experimental Stress Analysis, Finite Element Method, Numerical Analysis, Research Methodology and Proposal Writing, and Final year projects coordination and supervision.

GRANTS RECEIVED

Newton Fund - Researcher Links Workshop Grant of £ 21,640 (KSh. 2,813,200): To host a workshop on “Future Marine Manufacturing to Support Blue Economy Growth in Kenya”. Joint application by Newcastle University and Jomo Kenyatta University of Agriculture and

Technology. Simon Benson (UNEW), Robert Kiplimo (JKUAT) and Christiaan Adika Adenya (JKUAT), 2017

CURRICULA DEVELOPED

1. Curriculum for Bachelor of Science in Naval Architecture and Ocean Engineering, Jomo Kenyatta University of Agriculture and Technology, 2017.
2. Curriculum for Master of Science in Marine Shipping Innovations, Pan African University, Institute of Basic Sciences Technology and Innovation (PAUISTI), 2017.
3. Curriculum for Doctor of Philosophy in Marine Shipping Innovations, Pan African University, Institute of Basic Sciences Technology and Innovation (PAUISTI), 2017
4. Consultancy on curriculum for Diploma course in Marine, Maritime and Fisheries Science for Somali Marine Fisheries Science Institute.

MASTER OF SCIENCE STUDENTS SUPERVISED

1. Fakher Jribi, "Characterization of Corrosion Rate in Metal Materials for Water Tanks in Sub-Saharan Africa", Mechanical Engineering, PAUSTI. (Ongoing)
2. Zamzu Chrispin Ouko, "Analysis of Microstructure and Micromechanics of Fatigue Crack Growth in Secondary Al-7Si-Mg Cast Alloys with Transition Element Additions", Mechanical Engineering, PAUSTI. (Ongoing)
3. Kiptoo Hillary Cheruiyot, "Numerical Modeling of an Offshore Oscillating Water Column Wave Energy Converter", Mechanical Engineering, JKUAT. (Ongoing)
4. Uwihanganye Ben Claude, "Numerical Modeling of Water and Mooring Line Interaction for a Floating Barge at Lake Kivu using Immersed Boundary Method", Mechanical Engineering, JKUAT, 2019-01.

BACHELOR OF SCIENCE FINAL YEAR PROJECT SUPERVISED

1. Ahmed Salim and Hassan Rashid, "Design and Fabrication of an Automatic Towing and Mooring Mechanism for Drydocking", BSc Marine Engineering, JKUAT, 2019/2020. (Ongoing)
2. Kiptoo Newton Kiptanui and Ahmed Khalfan Abdulsomad, "Design and Fabrication of an Automated Anti-Piracy Targeting System", BSc Marine Engineering, JKUAT, 2018/2019.
3. Ahmed Haitham Farid and Talei Obed Kipngetich, "Design and Fabrication of a Hydrodynamic Tank", BSc Marine Engineering, JKUAT, 2017/2018.
4. Abubakar Abubakar Salim and Saleh Saad Yahya, "Design and Fabrication of a Boat Waste Collection System", BSc Marine Engineering, JKUAT, 2017/2018
5. Nyambane Nahshon and Nyariki Wycliffe, "Design and Fabrication of a Coconut Shell Crusher to Produce Chips for Manufacture of Chipboards", BSc Mechanical Engineering, JKUAT, 2009/2010.

MASTER OF SCIENCE THESES EXAMINED

1. Abdulai Ayirebi Ankrah, "A Hybrid Fault Diagnostic Method of Railway Vehicle Suspension Based on Data-Driven and Model-Based Approaches", Mechanical Engineering, PAUSTI, 01/2020.
2. Gatete Eugene, "Modeling Performance Improvement of High-Speed Boats Running on an Outboard Engine", Mechanical Engineering, JKUAT, 11/2018.

3. Mutava Joseph Kioko, "" Fracture Analysis of a Pressure Vessel Using the *J*-Integral Energy Approach", Mechanical Engineering, JKUAT, 04/2018.
4. Nyiranzeyimana Gaudence, "Characterization of Fatigue Properties of Secondary Cast Aluminium-Silicon Alloys for Cylinder Head Applications", Mechanical Engineering, JKUAT, 03/2017.
5. Kariuki Lucy Wanja, "Optimization of Pocket Milling Tool Path for Chatter Avoidance and Reduced Machining Time", Mechatronic Engineering, JKUAT, 03/2017.

MASTER OF SCIENCE RESEARCH PROPOSALS REVIEWED

1. Muhayimana Philbert, "Process Optimization of Small Scale Ball Mill for Artisanal and Small Scale Gold Miners Using Discrete Element Method", Mechanical Engineering, JKUAT, 2017-11.
2. Wasonga Erick, "Manufacture of Composite Product from Sugar Cane Rind as Reinforcement Agent in Epoxy and PLA Matrices", Mechanical Engineering, JKUAT, 2017-04.
3. Simiyu Laura Wambani, "Effect of Transition Elements on the Heat Treatment Response and Fatigue Performance of Secondary Cast Al-7SiMg (Cu) Alloys", Mechanical Engineering, JKUAT, 2016-11.

PROFESSIONAL SKILLS

Managerial and Supervisory Skills: I am able to multitask. I can manage project planning, project execution, evaluation, day to day running and administrative roles, project supervision and purchasing roles. I can manage people and guide them in achieving specific goals.

Interpersonal and Teamwork Skills: I have interacted and worked with people of varying academic levels, skills and attitudes. I have learnt how to motivate and work with teams.

Computer Skills: I can confidently use Microsoft Windows, Word, Excel, PowerPoint, Fortran Programming, and the Internet. I am capable of quickly learning and adapting to new computer software and programmes.

ON-JOB TRAINING

- **Leadership and Management Training** – Organized by JKUAT, 17th ~18th April 2019, SAJOREC.
- **Effective Teaching/Instructional Methods Workshop** – Series I: Organized by School of Mechanical, Manufacturing and Materials Engineering, 6th ~7th October 2016, JKUAT.

PERSONAL ACHIEVEMENTS

- Completed the Safaricom Lewa Marathon 21 km half Marathon on 27/06/2009.
- Climbed and went round the peak of Mt. Longonot on 16/08/2008.
- Completed the Standard Chartered Nairobi Marathon 21 km half Marathon 2007 and 2009 editions.
- Completed the Standard Chartered Nairobi Marathon 10 km road races 2003, 2005, and 2006 editions.
- Founder member of JKUAT Staff Fitness Club.

ACADEMIC AWARDS

- General Motors (K) Limited prize for best final year student in the Department of Mechanical Engineering, at the University of Nairobi, 1999/2000.
- British Oxygen Company Gases (K) Limited prize for best final year student in the Department of Mechanical Engineering, the University of Nairobi, 1999/2000.
- Prize for best 1993 Kenya Certificate of Secondary Education candidate in Western Province of Kenya.

COMMUNITY, SOCIAL AND LEADERSHIP RESPONSIBILITIES

- Leader, CITAM Athi River Bible Study Group (Sunset Boulevard Estate): 04/2019 to date.
- Vice-Chairman, JKUAT Mechanical & Mechatronic Staff Welfare Association: 09/2007 to 07/2011.
- Founder Member, JKUAT Staff Fitness Club: 01/2007 to date.
- Chairman, Focus Associates Thika: 05/2008 to 03/2010.
- Chairman, Alumni of the Main Campus Christian Union, Nairobi: 04/2005 to 04/2007.

HOBBIES

Jogging, swimming, reading novels, listening to Christian music, photography, traveling and watching wildlife.

PUBLICATIONS

1. Fakher Jribi, Christiaan Adika Adenya, and James Mutuku Mutua, "Atmospheric Corrosion of Stainless Steel 304", International Journal of Engineering Research and Technology, Vol.13, No.3, pp. 391-396, 2020.
2. Daniel K. Too and Christiaan A. Adenya, "Developing Seafaring in Kenya as a Source of Employment Based on Case Study of the Philippines", Proceedings of the 2019 Sustainable Research and Innovation Conference, 8th - 10th May 2019, JKUAT, Nairobi, Kenya.
3. Ben Uwihanganye, Christiaan A. Adenya, and Hiram M. Ndiritu, "Review of Numerical Approach Used in the Optimization of Mooring Systems for Floating Structures", International Journal of Engineering Technology and Scientific Innovation, Vol. 3, (5), pp 201-235, 2018.
4. Jialong Jiao, Shuzheng Sun, Jide Li, Christiaan Adika Adenya, Huilong Ren, Chaohe Chen, Dongjiao Wang, "A Comprehensive Study on the Seakeeping Performance of High Speed Hybrid Ships by 2.5D Theoretical Calculation and Different Scaled Model Experiments", Ocean Engineering, Vol. 160, pp 197–223, 2018.
5. Jialong Jiao, Chaohe Chen, Shuzheng Sun, Christiaan Adika Adenya, Huilong Ren, "Reproduction of Ocean Waves for Large-Scale Model Seakeeping Measurement: The Case of Coastal Waves in Puerto Rico & Virgin Islands and Gulf of Maine", Ocean Engineering, Vol. 153, pp 71-87, 2018.
6. Jialong Jiao, Huilong Ren, Christiaan Adika Adenya and Chaohe Chen, "Development of a Shipboard Remote Control and Telemetry Experimental System for Large –Scale Model's Motions and Loads Measurement in Realistic Sea Waves", Sensors, 2017, 17(11), 2485.
7. Adenya Christiaan Adika, Ren Huilong, Li Hui and Wang Di, "Estimation of Springing Response for 550,000 DWT Ore Carrier", Journal of Marine Science and Application, Vol. 15 (3), pp 260-268, 2016.

8. Adenya Christiaan Adika, Ren Huilong and Jiao Jialong, "Experimental Investigation of the Behaviour of a Large Ship in Irregular Waves", *International Journal of Engineering Research in Africa*, Vol. 23, pp 103-112, 2016.
9. Adenya Christiaan Adika, Ren Huilong, and Qing Chuandong, "Numerical Analysis of the Motion and Load Responses of a 400,000 DWT Ore Carrier in Waves", in *Proceedings of MTS/IEEE OCEANS 2015 - Washington*, Washington D.C., USA, 19th - 22nd October 2015, pp. 1-7, 2015.
10. Jiao Jialong, Ren Huilong, Sun Shuzheng, Liu Ning, Li Hui, Adenya Christiaan Adika, "A State-of-the-Art Large Scale Model Testing Technique for Ship Hydrodynamics at Sea", *Ocean Engineering*, Vol. 123, pp 174-190, 2016.
11. Jiao Jialong, Ren Huilong, Sun Shuzheng, Adenya Christiaan Adika, "Investigation of a Ship's Hydroelasticity and Seakeeping Performance by Means of Large-Scale Segmented Self-Propelling Model Sea Trials", *Journal of Zhejiang University-SCIENCE A (Applied Physics & Engineering)*, Vol. 17(6), pp 468-484, 2016.
12. Jiao Jialong, Ren Huilong, Sun Shuzheng, and Adenya Christiaan Adika, "Experimental Investigation of Wave-Induced Ship Hydroelastic Vibrations by Large-Scale Model Measurement in Coastal Waves," *Shock and Vibration*, vol. 2016, Article ID 9296783, 14 pages, 2016.
13. Jiao Jialong, Ren Huilong, and Adenya Christiaan Adika, "Experimental and Numerical Analysis of Hull Girder Vibrations and Bow Impact of a Large Ship Sailing in Waves", *Shock and Vibration*, vol. 2015, Article ID 706163, 10 pages, 2015.
14. Adenya Christiaan Adika and Kihui John Muniu, "Stress Concentration Factors in Thick Walled Cylinders with Elliptical Cross-Bores", *Proceedings of the 2010 JKUAT Scientific, Technological and Industrialization Conference*, 17th-19th November 2010, JKUAT, Nairobi, Kenya, pg 181-200.
15. Adenya Christiaan Adika and Kihui John Muniu, "Stress Characterization in Thick walled Cylinders with Elliptical Cross-Bore", *Proceedings of the 2010 Mechanical Engineering Conference on Sustainable Research and Innovation*, 8th-9th April 2010, Volume 2, JKUAT, Nairobi, Kenya, pg 78-86.

REFEREES

- 1. Prof. Eng. Bernard W. Ikua,**
Ag. Deputy Vice Chancellor, Administration,
Jomo Kenyatta University of Agriculture and Technology,
P. O. Box 62000 – 00200, City Square, Nairobi, Kenya.
Mobile: +254 722 286264
E-mail: ikua_bw@eng.jkuat.ac.ke

- 2. Eng. Prof. John M. Kihui,**
Professor, Department of Mechanical Engineering,
Jomo Kenyatta University of Agriculture and Technology,
P. O. Box 62000 – 00200, City Square, Nairobi, Kenya.
Mobile: +254 700 930690
E-mail: kihiusan@yahoo.com

- 3. Dr. Eng. Hiram Muriithi Ndiritu,**
Ag. Principal, College of Engineering and Technology,
Jomo Kenyatta University of Agriculture and Technology,
P. O. Box 62000 – 00200, City Square, Nairobi, Kenya.
Mobile: +254 722 421672
E-mail: hndiritu@eng.jkuat.ac.ke

- 4. Prof. Ren Huilong,**
Professor, College of Shipbuilding Engineering,
Harbin Engineering University,
No.145-1, Nantong Street, Nangang District, Harbin,
Heilongjiang Province, 150001, P. R. China.
Mobile: +86 135 0451 9650
E-mail: renhuilong@263.net, renhuilong@hrbeu.edu.cn