

**UNIVERSITY OF DAR ES SALAAM**  
**Department of Mechanical and Industrial Engineering**  
**P.O. BOX 35131, DAR ES SALAAM, TANZANIA**

**Curriculum Vitae**

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**Prof. Iddi S.N. Mkilaha, B.Sc.(Eng.), M. Eng., Dr. Eng.**  
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**1. PERSONAL PARTICULARS**

- 1.1 Name:** Iddi Suleiman Nyangarika MKILAHA  
**1.2 Birth date/Place:** July, 21, 1956/Kilimanjaro, Tanzania  
**1.3 Nationality:** Tanzanian.  
**1.4 Marital Status:** Married with a son and two daughters

**2. ACADEMIC PROFILES**

**2.1 Basic Education**

- 2.1.1 Primary:** Rundugai Primary School, 1966-72  
**2.1.2 Secondary:** Siha Secondary School, 1973-76  
**2.1.3 High School:** Mkwawa High School, 1977-78

**2.2 Professional University Education**

- 2.2.1 B.Sc. (Eng.) (Hons.) Mech. Engineering, University of Dar es Salaam, 1980-84  
2.2.2 Certificate in Japanese Language, Nagoya University, Japan, 1985-86  
2.2.3 M. Eng. Energy Engineering, Toyohashi Univ. of Technology, Japan, 1986-88  
2.2.4 Dr. Eng., Diesel engine emissions, Toyohashi Univ. of Technology, Japan, 1996

**2.3 Short Courses**

- 2.3.1 University Teaching Methodology, University of Dar es Salaam, 1989  
2.3.2 Participatory approach to Planning, University of Dar es Salaam, 1989  
2.3.3 Rural Energy Planning, University of Twente, Holland, 1990  
2.2.5 Industrial Energy Management (SADC Energy project), University of Pretoria, 1999  
2.2.6 Data acquisition systems and computing, Toyohashi University of Technology, Japan, 2000  
2.2.7 Trace metals control workshop, University of Tokyo, 2001  
2.2.8 Combustion Modeling, Waseda University, Tokyo, Japan, 2001  
2.2.9 Effective teaching, University of Dar es Salaam, 2004.  
2.2.10 Fund raising Fundamentals, University of Dar es Salaam, 2004  
2.2.11 Hydropower Training Course, Indian Institute of Technology, Roorkee, India, 2009  
2.2.12 Training Course on Regulatory Bodies, University of Florida, Gainesville, USA, 2009

- 2.2.13 Uranium Geology and Exploration, Regional Training Course, Antananarivo, Madagascar, 26 – 30 March 2012.
- 2.2.14 Training on Nuclear Power Development for Newcomer Countries, IAEA, France, June 2012
- 2.2.15 Seminar on E-Learning Platforms, IAEA Training for Senior Educators, Accra, Ghana, May 2013

### 2.3 Membership of Professional Institutions

- 2.3.1 Institution of Engineers Tanzania, Graduate Member, 1984-to date
- 2.3.2 Japan Society of Mechanical Engineers, Japan, Member, 1993-to date
- 2.3.3 Society of Automobile Engineers Japan, Member, 1994-to date
- 2.3.4 Society of Chemical Engineers Japan, Member, 2000-todate
- 2.3.5 Marquis Who Is Who in Science and Technology, Engineering, Registering in 2003
- 2.3.6 Registered Professional Engineer, Engineers Registration Board, Tanzania, 2003

### 2.4 Areas of Specialty

<b>Specialty</b>	<b>Level, Institution, Country</b>
2.4.1 Mechanical Engineering	Undergraduate Level at UDSM, Tanzania
2.4.2 Turbo machines	Teaching the Course at UDSM, Tanzania
2.4.3 Energy Management & Auditing	Professional Programs at Twente Univ., Holland
2.4.4 Internal Combustion Engines	Masters Degree Level at TUT, Japan
2.4.5 Pollution Science & Control	Doctoral Program at TUT, Japan
2.4.6 Diesel Engine Emissions	Doctoral Program at TUT, Japan
2.4.7 Automotive Engineering	Doctoral Program at TUT, Japan
2.4.8 Renewable Energy Technologies	Teaching the Course at UDSM, Tanzania
2.4.9 Engineering Mechanics (Statics)	Conducting tutorials at UDSM, Tanzania
2.4.10 Dynamics	Teaching the Course at UDSM, Tanzania
2.4.11 Internal Combustion Engines	Teaching the Course at UDSM, Tanzania
2.4.12 Heat Transfer	Teaching the Course at UDSM, Tanzania
2.4.13 Thermodynamics	Teaching the Course at UDSM, Tanzania
2.4.14 Fluid Mechanics	Teaching the Course at UDSM, Tanzania
2.4.15 Pascal Programming in Computers	Conducting tutorials at UDSM, Tanzania
2.4.16 Informatics and Micro-computers	Teaching a course at UDSM, Tanzania
2.4.17 Industrial Energy Management	Teaching a course at UDSM, Tanzania
2.4.18 Entrepreneurship	Teaching a VETA Workshop, Tanzania
2.4.19 Trace metal in combustion	Research at TUT, Japan
2.4.20 Environmental Management	Teaching at TUT & UDSM
2.4.21 Air Quality Management	Teaching at TUT, Japan
2.4.22 Nuclear Power Development	Workshops of IAEA (2010, 2011)
2.4.23 Nuclear Security and Safeguard	Working with TAEC as Director General
2.4.24 Uranium Geology and Exploration	Training while in TAEC

### 2.5 Additional Skills

- Computer architecture - Experiences gained during Postgraduate study at Toyohashi University of Technology, Japan
- Signal Processing - A course and practical experiences gained during Postgraduate Study at Toyohashi University of Technology, Japan

Data acquisition systems -	A course and practical experiences gained during Postgraduate Study at Toyohashi University of Technology, Japan
Energy Tariff Development-	Experience as a member of the Small Power Development Working Group of the Ministry of Energy and Minerals, URT
Strategic Planning -	A course at the University of Dar es Salaam and experience on NIT Strategic Plan Development
Leadership of Change -	Special training conducted by Video Conferencing through Tanzania Global Development and Learning Center
Project Development -	FUNFUN Training programme conducted by University of Dar es Salaam
Nuclear Technologies -	Trainings conducted under the International Atomic Energy Agency & AFRA
Regulatory Body Functions Nuclear Regulatory Bodies	Training at the Florida University on regulatory functions Trainings and undertakings at the Tanzania Atomic Energy Commission
Uranium Geology and Exploration:	Training undertaken under Regional Project in Antananarivo, Madagascar

## 2.5.1 Computer Knowledge

### 2.5.1.1 Programming

2.5.1.1.1 Basic Programming	2.5.1.1.2 FORTRAN Programming
2.5.1.1.3 Pascal Programming	2.5.1.1.4 Data base Programming
2.5.1.1.5 High Graph Plotting Software	2.5.1.1.6 Candy 4 Drawing Software
2.5.1.1.7 MacDraw Professional Software	2.5.1.1.8 Perfect Draw Software
2.5.1.1.9 Microsoft Excel	2.5.1.1.10 Microsoft Access
2.5.1.1.11 HTML	2.5.1.1.12 Object Oriented Programming

### 2.5.1.2 Word Processing

2.5.1.2.1 Microsoft Word	2.5.1.2.2 Word Perfect
2.5.1.2.3 Word Star	2.5.1.2.4 Lotus Manuscript
2.5.1.2.5 MacWrite Professional	2.5.1.2.6 MS Excel
2.5.1.2.7 MS Access	

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## 3. ENGINEERING ENGAGEMENTS

- 3.1 **April 1981 - June 1981 Practical Training as Technician Trainee** at SIDO Industrial Estates, Arusha, Tanzania. The work performed during this practical training includes fabrications of various mechanical engineering components through casting, welding, machining and other processes. Similarly, gained experience on maintenance of machines.
- 3.2 **April 1982 - June 1982 Practical Training as Technician** at Jandu Plumbers, Arusha, Tanzania. During this practical training, I was introduced to design and development of plumbing and tubing and pipefitting. Maintenance of machineries was also part of the tasks.
- 3.3 **April 1983 - June 1983 Engineer Trainee** at KIL TEX Arusha, Tanzania. The work undertaken under this practical training included the design and manufacture of effluent system. The function of this unit was to separate effluents from the exhaust from the dyeing plant so as to restore water to its original state. Tests revealed that the system worked at 60% effectiveness and requested for future improvements

- During this period also, a centrifugal dryer was designed. The aim was to dry textiles faster rather than depending on the natural ways of drying.
- 3.4 **May 1984 - August 1984 Practical Engineer Trainee** at TAZARA Mechanical Workshop, Dar es Salaam, Tanzania. After my Bachelor degree I had an opportunity to work during as a graduate engineer at the T AZARA Mechanical Workshops in order to gain practical experience since I was to join the Faculty at the University of Dar es Salaam, Tanzania. During this period I was involved with regular maintenance of locomotives and engines. Design and modifications of various mechanical components was part of the tasks I undertook.
  - 3.5 **Tutorial Assistant April 1984-1986** On graduation I was posted to the University of Dar es Salaam, Tanzania where I was join the Mechanical Engineering Department as academic member of staff. My duties were to assist senior staff with the tutorials and practical. I was specifically engaged with Engineering Drawings, Engineering Mechanics, Thermodynamics and Fluid Mechanics. During this time I was involved with part time teaching of Fluid Mechanics course at the Dar es Salaam Technical College (now DIT).
  - 3.6 **Masters in Engineering (M.Eng.) Research April 1986 - March 1988** I pursued an M. Eng. programme at the Toyohashi University of Technology, Japan. My major specialization was Energy Engineering. After completion of the course work, I started my M. Eng. Research work. The title of my research was "Two Dimensional Modeling of Internal Combustion Engines' Valve Flow Using a Constant Volume Chamber".
  - 3.7 **Assistant Lecturer July 1986 - June 1991** I was promoted to the Assistant Lecturer position on registration to Masters program at Toyohashi University of Technology. After the completion of the Masters program, I returned to the University of Dar es Salaam, where I was the lecturer in charge of the course ME 426 Turbo machinery and ME 326 Internal Combustion Engines. During this time, I developed an undergraduate course on Renewable Energy Technologies to be offered to Mechanical and Process Engineering students as an optional course under the ME 470 Selected topics in Mechanical Engineering. It is during this time that I engaged myself to writing a manuscript on Turbo-machines. The manuscript has now been adopted as a standard manuscript at the Faculty of Engineering and has been given a registration number FOE/ME/MAN/7 194.
  - 3.8 **Lecturer July 1991 - June 1997** In July 1991 I was promoted to the Lecturer rank of the University of Dar es Salaam. My areas of interest were now more in Energy Engineering, Engines and Computer Applications. During this time I was able to develop a program on Energy Management to be offered as an optional course. These ideas were therefore the basis for the new course on Industrial Energy Management. During this time, I was involved in the Teaching of ME 426 and 326 as well as the Renewable Energy Technologies course. I also taught an optional course on the Computer Modeling of Fluid and Heat Transfer problems.
  - 3.9 **Doctorate research January 1993 - March 1996.** I joined the Toyohashi University of Technology, Department of Ecological Engineering, and Japan for Doctor of Engineering program. My major specialization was Control of Diesel Engine Emissions under the Comprehensive Energy Engineering Program. This study lead to writing a doctorate thesis titled, "Study of Emissions Reduction from Diesel Engines by Compressed Air Injection during Combustion", besides a total of 4 journal papers and 4 conference papers which were written based on this work.
  - 3.10 **Senior Lecturer July 1997 – June 2003.** After completion of the PhD I returned to Tanzania where I worked as a Lecturer until July 1997 when I was promoted to the rank of Senior Lecturer. During this time I taught undergraduate courses in Computer Programming, Dynamics, Energy Management, Renewable Energy Technologies, Internal Combustion Engines, Introduction to Computers and Informatics. Similarly I undertook a number of consultancies as listed in the list of consultancies.

- 3.11 Visiting Foreign Researcher August 2000 - October, 2002.** During this period I undertook a Sabbatical Leave, which I joined the Future Research Project on Trace Metals Control at the Department of Ecological Engineering, Toyohashi University of Technology. The research was dealing with the speciation and subsequently emissions of trace elements into the atmosphere. Using both a thermo gravimetric analyzer and a drop tube furnace, both experimental fuels and wastes were tested with emphasis on the mechanisms for the speciation, emissions and control by sorbent. Coal and biomass combustion was also during this period. A number of publications were realized from this work.
- 3.12 Postgraduate teaching duties 2002-todate.** I have been involved in teaching Masters Students a course on Environmental Management, Environmental aspects of energy conversion and their control. I am now involved in conceiving a course on Combustion Engineering to be taught at postgraduate level.
- 3.13 Associate Professor July 2003 - to date.** Lecturing and sharing other administrative duties at the Department, Faculty and University as a whole. Besides, I have been actively involved in supervision of postgraduate students and offering consultancies to companies and general public.
- 3.14 Head of Department of Energy Engineering, July 2006 – June 2009.** Management and organizational matters in the Department. As the Head, I have to Plan, oversee the implementation and evaluation of the performance of such plans in research, teaching and consultancy within the strategic plans of the University of Dar es Salaam.
- 3.15 Member of the Small Power Producers Development Working Group, May, 2007 – to date.** The working group operates as a think tank of the Ministry of Energy and Minerals, United Republic of Tanzania on Small Power Development Project. The task of this small working group is to review regularly the Small Power Purchase Agreement (SPPA) and Small Power Purchase Tariff
- 3.16 Coordinator for the M.Sc. (Renewable Energy) Programme,** at the College of Engineering and Technology, University of Dar es Salaam, 2007 – 2009.
- 3.17 Project Leader, Research Project on Towards Sustainable Energy Provision in Tanzania,** World Bank Supported Research Project, University of Dar es Salaam, 2007 – 2009
- 3.18 Member, SUMATRA Board of Directors,** United Republic of Tanzania, January 2009 – to date
- 3.19 Member, Ocean Road Cancer Institute Board of Directors,** United Republic of Tanzania, August 2009 – to date
- 3.20 Member, TFDA Board of Directors,** United Republic of Tanzania, August 2009 - 2011
- 3.21 Member, Ministry of Health Advisory Board on Food Safety and Quality,** United Republic of Tanzania, August 2009 – to 2011
- 3.22 Councilor, Medical Imaging and Radiological Profession Council,** MOHSW, 2010 to date
- 3.23 National Liaison Officer, Technical Cooperation, International Atomic Energy Agency,** Vienna, Austria, 2009 – To date.
- 3.24 AFRA Coordinator, Technical and Regional Cooperation,** 2009 – To date.
- 3.25 Member, National Advisory Team on Nuclear Science and Technology Development Strategy,** Ministry of Communication Science and Technology, Dar es Salaam, December 2010 – to date
- 3.26 Member, Search Team for:** (i) Principal of MIST, (ii) Deputy Principals MIST, (iii) Deputy Principals Institute of Adult Education, (iv) Deputy Principals Arusha Technical College
- 3.27 Chairman of Search Team,** NACTE Executive Secretary, 2010
- 3.28 Interim Chairman, Ocean Road Cancer Institute Board of Directors,** United Republic of Tanzania, August 2012 – June 2013

**3.29 Focal Point of URT, AU Nuclear Disarmament, UN Linkages, United Republic of Tanzania Energy Resources, nia, June 2013 – to date**

**3.30 Part time Lecturer, Course on Sustainable Energy Utilization, Nelson Mandela African Institute of Science and Technology, Academic year 2012/2013**

#### **4. EMPLOYMENT RECORDS**

##### **4.1 Regular Employment**

	<b>Firm</b>	<b>Position</b>	<b>Period</b>
4.1.1	Tropical Pesticides Research Institute	Lab. Assistant I	1980 (Jan-June)
4.1.2	University of Dar es Salaam	Tutorial Assistant	1984-86
4.1.3	University of Dar es Salaam	Assistant Lecturer	1986-91
4.1.4	University of Dar es Salaam	Lecturer	1991- 1997
4.1.5	University of Dar es Salaam	Senior Lecturer	1997 – 2003
4.1.6	University of Dar es Salaam	Associate Professor	2003 - To date
4.1.7	Tanzania Atomic Energy Commission (Secondment to TAEC)	Director General	2009 - To date

##### **4.2 Part-time Employment/Engagements**

	<b>Position</b>	<b>Field</b>	<b>Firm</b>	<b>Period</b>
4.2.1	Lecturer	Fluid Mechanics	Dar Technical	1984-85
4.2.2	Examiner/Moderator	Techno. Exams.	N.E.C.T.A.	1984-85
4.2.3	External Examiner	Techno. Exams.	T.T.I. - Kidatu	1984-85
4.2.4	Secretary Exam Board	Techno. Exams.	T.T.I. - Kidatu	1988-92
4.2.5	External Examiner	Techno. Exams.	T.T.I. - Kidatu	1988-92
4.2.6	Examiner/Moderator	Techno. Exams.	N.E.C.T.A.	1988-91
4.2.7	Research Member	Mini-Hydro Group	FoE, UDSM	1988-90
4.2.8	Projects Coordinator	Mechanical Engineering	ME, UDSM	1989-92
4.2.9	Teaching Improve Coord.	Mechanical Engineering	ME, UDSM	1989-92
4.2.10	Students Records Coord.	Mechanical Engineering	ME, UDSM	1989-92
4.2.11	Research Member	Vortex Tube Refrigeration	FoE, UDSM	1991-92
4.2.12	External Examiner	Mechanical Engineering	N.E.C.T.A.	1998-2000
4.2.13	Organizing Secretary	ME 97 Intern. Conference	ME, UDSM	1997
4.2.14	Examinations Officer	ME Dept.	ME, UDSM	1997-2000
4.2.15	Course Lecturer	Microcomputer Applic.	Compo Sc., UDSM	1998-2000
4.2.16	Instructor	Entrepreneurship VETA	Workshop	1999
4.2.17	Visiting Researcher	Trace metals control	Toyohashi Univ. of Techno. Ecological Eng'g	2000-2001
4.2.19	JSPS Research Fellow	Trace Metals control	Toyohashi Univ. of Techno. Ecological Eng'g	2001-2002
4.2.20	Examinations Officer	Mechanical Eng.	UDSM	1996-2000
4.2.21	Examinations Officer	Energy Engineering	Dept. Eng'g, UDSM	2002-2006
4.2.22	External Examiner	Technical Examinations	NECTA	2002-
4.2.23	Research Member	Linux OS	DoCS, FoS	2004-
4.2.24	Head of Department	Energy Engineering	MECHE, CoET	2006-
4.2.25	Team Member	Fertilizer Factory Dev.	Planning, URT	2006-
4.2.26	Team Member	CoE – FUT	Research development	2006-
4.2.27	Team Member	Distance Teaching	FIVE, UDSM	2007-
4.2.28	Member	Working group on SPP	MEM, URT	2007-
4.2.29	Course Lecturer	Sustainable Energy Utilization	UDSM	2009 – todate
4.2.30	Course Lecturer	Sustainable Energy Utilization	NMAIST	2012 – to date
4.2.31	Chairman	AFRA/IAEA	IAEA-AFRA	2013 – 2014

## **5. RESEARCH INTERESTS**

- 5.1 Coal combustion and emissions
- 5.2 Trace metal behavior in High Temperature Reaction Environments
- 5.3 Internal combustion engine phenomenon and environmental aspects
- 5.4 Automotive Engineering
- 5.5 Alternative fuels and Renewable energy resources
- 5.6 Biomass and coal utilization for energy purposes
- 5.7 Industrial energy planning management
- 5.8 Combustion Science and Energy conversion systems
- 5.9 Wastes management and Zero Emission
- 5.10 Computer systems and application
- 5.11 Urban Transport Energy and Pollution Abatement
- 5.12 Utilization of natural resources
- 5.13 Indoor air pollution and control
- 5.14 Dispersion of pollutants in the atmosphere

## **6. PUBLICATIONS**

### **6.1 Journal Papers**

- 6.1.1 Chami, F.A. & **Mkilaha. I.S.N.**; "Development of a Vortex Tube Refrigerator"; *Journal of Tanzania Engineer of IET*, Vol. **3**, No.4, pp. 23-26, Tanzania, (1991).
- 6.1.2 **Mkilaha. I.S.N.** & Chami, F.A.; "Two Dimensional Modeling of ICEs' Valve Flow"; *Journal of The Tanzania Engineer of IET*, Vol. **4**, No.1, pp. 31-42, Tanzania, (1991).
- 6.1.3 **Mkilaha. I.S.N.**, Kawai, D., Inoue, M., Naruse, I. & Ohtake, K.; "Influence of Gas Type and Injection System on Simultaneous Reduction of Soot and NO<sub>x</sub> in IDI Diesel Engine"; *Transaction of Japan Society of Mech. Engineers (.J:S.ME.)*, Series **B**, Vol. **61**, No. **560**, pp. 3497-3503, (1995). (in Japanese)
- 6.1.4 **Mkilaha. I.S.N.**, Kawai, D., Daud, K., Naruse, I. & Ohtake, K.; "Compressed Gas, Injection into the Pre-chamber of an IDI Diesel Engine: Simultaneous Reduction of NO<sub>x</sub> and Particulate Matter under Exhaust Gas Recirculation and Loaded Condition", *Trans of Soc. of Automotive Engineers, Japan*, Vol. **27**, No.4, pp. 27-32, Japan, (1996). (In Japanese)
- 6.1.5 **Mkilaha. I.S.N.**, Kawai, D., Inoue, M., Naruse, I. & Ohtake, K.; "Simultaneous Reduction of Soot and NO<sub>x</sub> in Diesel Engine by Compressed Gas Injection: Macroscopic Study at Residual Load"; *Journal of Automotive Engineering*, Institution of Mechanical Engineers (IMECHE), Vol. **211**, Part **D**, pp. 227-236, U.K., (1997).
- 6.1.6 Kawai, D., **Mkilaha. I.S.N.**, Osawa, T., Naruse, I. & Ohtake, K., "Reduction of Pollutants from Diesel Exhaust by ", *Japan Society of Automotive Engineering (JSAE) Review*, Vol. **18**, pp. 241-245, (1997)
- 6.1.7 **Mkilaha. I.S.N.**, John, G.R. & Mshoro, I.B., "The Effects of External Speed Governors on Motor Vehicle Performance", *The Tanzania Engineer, Journal of IET*, Vol. **6**, # **3**, pp. 45-51, Tanzania, (1998)
- 6.1.8 **Mkilaha. I.S.N.** & John, G.R., "Analysis of NO<sub>x</sub> Reduction in Diesel Engines by Air Injection Using Stochastic Modeling", *African Journal of Science & Technology (AJST) Science and Engineering Series*, Vol. **1**, # **4**, pp. 91-99, (2001).
- 6.1.9 **Mkilaha. I.S.N.**, Yao, H. & Naruse, I., "Trace Metal Speciation during Sludge Combustion and Incineration", *Journal of Combustion Science & Technology*, Vol. **174**, #11 & 12, pp. 325-344, (2002)
- 6.1.10 **Mkilaha. I.S.N.**, Yao, H. & Naruse, I., "Thermodynamics Analysis of the Role of Chlorine and Sulfur Environment During Combustion and Incineration Processes", *Journal of Material Cycles Waste Management*, Vol. **4**, pp. 143-149, (2002)

- 6.1.11 **Yao, H., Saito, N., Mkilaha. I.S.N.** & Naruse, I., "Comparative Study of Lead and Cadmium Capture by Sorbents", *Journal of Chemical Engineering of Japan*, Vol. **35**, #5, pp.40 1-408, (2002)
- 6.1.12 Yao, H., Minato, D., **Mkilaha. I.S.N.** & Naruse, I., "Fundamentals on Vaporization Behavior of Trace Metal Compounds at Different Atmospheres and Temperatures", *Journal of Energy, Japan*, Vol. **81**, #4, pp. 256-262, (2002)
- 6.1.13 **Mkilaha. I.S.N.**, "A Combustion Analysis Approach to the Effects of Mercury Contamination Due to Small Scale Gold Mining", *East African Journal of Engineering*, Vol. **6**, No.2, pp. 109-116 (2002)
- 6.1.14 **Mkilaha. I.S.N.**, "Influence of Coal Minerals on Ash Formation and Deposition Behavior in Pulverized Coal Combustion", *East African Journal of Engineering*, (accepted), (2002)
- 6.1.15 **Mkilaha. I.S.N.**, "The Inclusion Behavior Of Sodium Compounds In Sub-Micron Particles Formed During Coal Combustion", *Uhandisi Journal*, (accepted), (2002)
- 6.1.16 Naruse, I., Yao, H. & **Mkilaha. I.**, "Sorbent control of trace metals in Sewage Sludge Combustion and Incineration", *Journal de Physique IV Proceedings*, Eds. Boutron, C. & Ferrari, C., pp. 917-920, EDP Sciences, France, (2003)
- 6.1.17 Yao, H. **Mkilaha, I.S.N.** & Naruse, I., "Screening of Sorbents and Capture of Lead and Cadmium Compounds During Sewage Sludge Combustion", *Journal of Fuel*, in Press, (2003)
- 6.1.18 Takuwa, T., **Mkilaha, I.S.N.** & Naruse, I., "Formation Characteristics of Fine Particles with Na Compounds During Coal Combustion", *Journal of Chemical Engineering of Japan*, Vol. 36, No. 11, pp. 1347-1351, (2003)
- 6.1.19 Yao, H., **Mkilaha, I.S.N.** & Naruse, I., "Screening of Sorbents and Capture of Lead and Cadmium Compounds During Sewage Sludge Combustion", *Journal of Fuel*, Vol. 83, No 7-8, Pages 1001-1007 , (2004)  
<http://else.hebis.de/cgi-bin/sciserv.pl?collection=journals&journal=00162361&issue=v83i7-8>
- 6.1.20 **Mkilaha. I.S.N.**, Mhilu, C.F. & John, G.R., "Characterization of Wastes Combustion and Pyrolysis Using Refuse Derived Fuels", *East African Journal of Engineering (EAJE)*, Vol. 8, # 1, pp. 28-41, (2005)
- 6.1.21 Takuwa, T., **Mkilaha, I.S.N.** & Naruse, I., "Mechanism of Fine Particulates Formation in Alkali Metal Environment During Coal Combustion", *Journal of Fuels of Japan*, Vol. 85, pp. 671-678, Elsevier, (<http://www.fuelfirst.com>) , (2006)
- 6.1.22 John, G.R. & **Mkilaha, I.S.N.**, "Gasification Kinetics of Ultra-fine Coal Char Oxidation in Flame Reaction", *Tanzania Journal of Engineering and Technology (TJET)*, Vol. 1, No. 1, pp. 84-97, (2006)
- 6.1.23 Mhilu C.F. & **Mkilaha, I.S.N.**, "Investigation of the Stability of Engine Governor System Operated at Low Speeds", *Tanzania Journal of Engineering and Technology (TJET)*, Vol. 1, No. 1, pp. 98-107, (2006)
- 6.1.24 **Mkilaha, I.S.N.**, "Kinetic of Trace Metal Compounds Evolution at Different Atmosphere and Temperature During Combustion and Incineration", *Tanzania Engineer Journal*, (2006) (submitted)
- 6.1.25 Bogohe, S.C. & **Mkilaha, I.S.N.**, "Population pressure and Urban Development Effects on Land Degradation in Developing Countries – A Case of Dar es Salaam City", *Tanzania Engineer Journal*, (2007) (submitted)
- 6.1.26 Gongo, P.S.M. & **Mkilaha, I.S.N.**, "Environmental Impacts of Coal Mines: A case of Kiwira Coal Mines", *The Journal of Engineering and Technology*, (2008) (Submitted)
- 6.1.27 **Mkilaha, I.S.N.** "Prediction of NO<sub>x</sub> Formation and Destruction from Co-combustion of Coal-Biomass", *Tanzania Journal of Science*, (2008) (submitted)
- 6.1.28 **Mkilaha, I.S.N.**, (2008), "Waste Oil Management in Tanzania: The Case of Dar es Salaam City", *International Journal of Integrated Waste Management Science and Technology, Elsevier*, (submitted – under review)
- 6.1.29 **Mkilaha, I.S.N.**, (2008), "Flow Field and Combustion Interactions in Spark Ignited Engines", *Tanzania Engineer Journal*, (under review)
- 6.1.30 Pantaleo, P. Kifanga, L.D. & **Mkilaha, I.S.N.**, (2011) "Illicit Trafficking of Radioactive Sources: Experiences with Fake Materials In Tanzania", *Tanzania Journal of Engineering and Technology*, (Accepted)



- 6.1.31 Athuman, O. & **Mkilaha, I.S.N.**, "Long Terms Energy Mix Projections – How Can Tanzania Sustainably Meet the Future Energy Needs?", *The Tanzania Engineer Journal*, Volume 12, No. 1, pp. 63- 74, **(2012)**
- 6.1.32 Legonda, I.A., Marsh, R., **Mkilaha I.S.N.**, Griffiths, A.J., **(2012)**. "Experimental study on carbon monoxide exposure during cooking in households: A case of Dar es Salaam, Tanzania", *Tanzania Journal of Engineering and Technology*, *JSME*, *(Accepted)*
- 6.1.33 Kawala, R.A., **Mkilaha, I.S.N.** & Chuma, F. (2012) Challenges on the Implementation of Quality Management System in Tanzania: Case Study of TAEC, *Journal of Accreditation and Quality Management*, November, **(2012)** *(Accepted)*

## 6.2 Conference, Symposium and Seminars

- 6.2.1. Nyichomba, B.B. & **Mkilaha, I.S.N.**; "Evaluation of Professional Competency and Skills in Technical Education and Training"; *Proc. of The 10-th Sub-regional Conference of the Heads of Examining Institutions (Eastern & Southern Africa)*, Arusha, Tanzania, pp. 80-92, September, **(1992)**
- 6.2.2 Inoue, M., Kaku, B., **Mkilaha, I.S.N.**, Naruse, I. & Ohtake, K.; "Study of Particulate Emissions Reduction in IDI Diesel Engine"; *Proc. of 11th ICE Symposium*, pp. 351-356, Tokyo, Japan, July, **(1993)**. (in Japanese)
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- 6.2.32 Gongo, P.S.M. & **Mkilaha, I.S.N.**, “Environmental Impacts of Coal Mines: A case of Kiwira Coal Mines”, *Conference on SMRCR '09*, (2008) (Accepted for presentation in May, 2009)
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- 6.2.40 Kawala, R.A., **Mkilaha, I.S.N.** & Chuma, F. Challenges on the Implementation of Quality Management System in Tanzania: Case Study of TAEC, *Nuclear Research Center of Algeria in Collaboration with IAEA – AFRA Project RAF/0/027*, 7<sup>th</sup> – 8<sup>th</sup> November, (2012)
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- 6.2.43 **Mkilaha, I.S.N.** & Legonda, I.A., Prospects for Environmental Achievements through Natural Gas Utilization: The Tanzanian Case, *The Second Oil and Gas Conference*, Dar es Salaam (October 2013)

### 6.3 Books, Manuscripts, Reports and Handouts

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- 6.3.2 **Mkilaha, I.S.N.** & Nshama, W.M.E.; Hydro-extractor Design; Fourth Year, Department of Mechanical Engineering Project Report, University of Dar es Salaam, Tanzania, **(1984)**.
- 6.3.3 **Mkilaha, I.S.N.**; Two Dimensional Modeling of Internal Combustion Engines' Valve Flow Using a Constant Volume Chamber; M.Eng. Thesis, Department of Energy Engineering, Toyohashi University of Technology, Japan, **(1988)**.
- 6.3.4 **Mkilaha, I.S.N.** & Chami, F.A.; Turbo machines; Teaching Manuscript, Faculty of Engineering Printing Unit, University of Dar es Salaam, Tanzania, **(1994)**.
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- 6.3.7 **Mkilaha, I.S.N.** & John, G.R.; Rehabilitation of Biogas Plants at Malindi- Mbweni, Technical Report to President's Office for the Rehabilitation of Biogas Plants at Mbweni, Dar es Salaam, Tanzania, February, **2000**
- 6.3.8 **Mkilaha, I.S.N.** & John, G.R.; Damaged Automotive Engine of Land Rover 110 Defender, Technical Opinion to Alliance Insurance Corporation Limited, Dar es Salaam, Tanzania, February, **2000**
- 6.3.9 **Mkilaha, I.S.N.**, Speciation and Emission of Trace Metals from combustion and Incineration Processes, *Sabbatical Leave Report*, University of Dar es Salaam, Tanzania, **2003**
- 6.3.10 **Mkilaha, I.S.N.**; Engineering Mechanics - Dynamics; Text Book for Students at the Faculty of Engineering, University of Dar es Salaam, Tanzania, (under preparation).
- 6.3.11 **Mkilaha, I.S.N.** & Twaakyondo, H.M.; Introduction to Microcomputer and Its Application,' Text Book for Students at the Department of Computer Science, University of Dar es Salaam, Tanzania, (under critical review).
- 6.3.12 Katima, J.H.Y., **Mkilaha, I.S.N.**, Itika, A. & Bwathondi, M: Gender Mainstreaming at the University of Dar Es Salaam – A case of Prospective College of Engineering and Technology, *Research Report, UDSM, 2005*
- 6.3.13 Ikingura, J.R., **Mkilaha, I.S.N.**, Mkony, C.A., Misana, S.B., Lupala, J. & Katabaro, J. Academic Quality Assurance and Control Policy for the University of Dar es Salaam, *The Office of the Chief Academic Officer, 2005*.
- 6.3.14 **Mkilaha, I.S.N.**, Manyahi, M. Wilson, L. & Maligo, C., Energy Auditing at the University of Dar es Salaam, *Consultancy Report for the Office of the Chief Administrative Officer, 2005*.
- 6.3.15 **Mkilaha, I.S.N.**, Manyahi, M. Wilson, L. & Maligo, C., Efficient Energy Utilization at the University of Dar es Salaam: Policy and Procedures, *Consultancy Report for the Office of the Chief Administrative Officer, 2006*
- 6.3.16 **Mkilaha, I.S.N.**, Manyahi, M. Wilson, L. & Maligo, C., The University of Dar es Salaam Energy Policy, *Consultancy Report for the Office of the DVC-PFA, 2007*
- 6.3.17 **Mkilaha, I.S.N.**, Victor, M.A.M., Kiluswa, M.Y., Nyari, K. & Msalali, M.C., Report on Curriculum Validation for NIT for Levels 7 & 8 in Automobile Engineering, NACTE, Dar es Salaam, **2007**
- 6.3.18 Katabaro, J., Uiso, C.B. & **Mkilaha, I.S.N.**, Effective Utilization of the Central Science Workshop, *The Office of Deputy Vice Chancellor – PFA, University of Dar es Salaam, 2007*
- 6.3.19 **Mkilaha, I.S.N.**, Principles of Turbomachines, Book under preparation, **2013**
- 6.3.20 **Mkilaha, I.S.N.** & Kimaro E. Study Report on Investigations on Allegations that Some Farmers Use Uranium Dust to Preserve Cereals, Joint work of TPRI & TAEC, URT, December **2012**.

## **7. RECORD OF MAJOR CONSULTANCIES**

- 7.1 Title:** Development of Safari Bed for Local manufacturing  
**Client:** HOSCO, Dar es Salaam  
**Tasks:** To develop a model safari bed to suit Tanzanian local market with a possibility of fabricating it locally.  
**Outcome:** A prototype and a report  
**Date:** 1984
- 7.2 Title:** Evaluation of wick burner stove  
**Client:** CHAMPS CO., Dar es Salaam  
**Tasks:** To perform performance tests on a locally made kerosene wick stove prototype.  
**Outcome:** Performance charts  
**Date:** 1985
- 7.3 Title:** Evaluation of the condition of newly imported TAT A buses for Tanzania Saruji Corporation  
**Client:** Tanzania Saruji Corporation, Dar es Salaam  
**Tasks:** Buses imported by the client through Simba Motors were doubted on their conditions as to whether new or reconditioned. Inspection was carried out in order to offer the conditions of the vehicles in detail.  
**Outcome:** A report suggesting that the engines were as good as new although the workmanship especially on the body was poor.  
**Date:** 1991.
- 7.4 Title:** Evaluation of Pumping Station Performances of the Stone Town Sewage Systems in Zanzibar.  
**Client:** Ministry of Works, Zanzibar  
**Tasks:** In order to rehabilitate the pumping stations effectively, an evaluation on the pumps and plumbing performances were carried out.  
**Outcome:** A report stating poor performance and recommending rehabilitation and replacement of all pumps and plumbing.  
**Date:** 1992
- 7.5 Title:** Valuation of UDSM vehicles for decision to repair or dispose them  
**Client:** University of Dar es Salaam, Dar es Salaam  
**Tasks:** To inspect and study maintenance records and depreciation rates to decide as to whether the vehicles were worth repairing or be disposed at the condition they are.  
**Outcome:** A report giving specific recommendations for each of the inspected vehicles.  
**Date:** 1992.
- 7.6 Title:** Studies on the Performance of Air Assisted Diesel Injection Nozzles for Engines.  
**Client:** Isuzu Motors., Japan  
**Tasks:** An air assisted injected nozzle suiting a 1.81 indirect injection diesel engine was designed and manufactured. Performance and spray patterns of the nozzle were developed from experimental rig.  
**Outcome:** Spray performance results  
**Date:** 1993
- 7.7 Title:** Evaluation of imported TATA Tanker Truck  
**Client:** GAPOIL Tanzania, Dar es Salaam

**Tasks:** A TAT A Tanker truck imported from India appeared to be old while it was supposed to be new. The client wanted a full inspection report on the vehicle with specific recommendations.  
**Outcome:** A report suggesting that the vehicle is not new but partially reconditioned one.  
**Date:** 1997.

**7.8 Title:** Professional Opinion on Effects of External speed governors on Vehicles.  
**Client:** Government of the United Republic of Tanzania, Dar es Salaam  
**Tasks:** To give a professional opinion on the effects of external speed governors on motor vehicles based on theoretical analysis.  
**Outcome:** A report with concrete recommendations  
**Date:** 1997

**7.9 Title:** Study of Potential Wind Sites for Electricity Generation in Tanzania.  
**Client:** DANIDA/TaTEDO for The Ministry of Energy and Minerals, Dar es Salaam  
**Tasks:** Undertake desk studies to identify possible sites for wind generation of electricity for the purpose of improving the energy availability in the rural areas of Tanzania.  
**Outcome:** A report giving an analysis of the available data and possible sites  
**Date:** May, 1998

**7.10 Title:** Rehabilitation of Biogas Plants at Malindi Mbweni  
**Client:** Presidents Office, Dar es Salaam  
**Tasks:** Two biogas plants at Malindi, Mbweni were tested and found not to perform well. The preliminary inspection deduces the cause of the problem as been internal as well as external leakage and worn out parts and appliances. The plants were rehabilitated, most of the accessories restored and wherever necessary, rebuilt.  
**Outcome:** Commissioning of the plants and handing over, as well as a technical report  
**Date:** November, 1999 I

**7.11 Title:** Technical Opinion on the failure of a Land Rover 110  
**Client:** Alliance Insurance Corporation Limited, Dar es Salaam, Tanzania  
**Tasks:** A Land Rover 110 overturned causing body damages on the vehicle. Later on after repairs, engine block breaks after connecting rod failure. It is proposed that this is related to the accident. The client who is the insurance company needed technical opinion on whether this could be the case.  
**Outcome:** Analysis of the situation based on the supplied documents and a technical report was submitted  
**Date:** February, 2000

**7.12 Title:** Energy auditing for Tanzania Posts Corporation Building in Dar es Salaam  
**Client:** Tanzania Posts Corporation, Dar es Salaam, Tanzania  
**Tasks:** TPC intends to acquire a new standby generator to cop with the regular power interruptions. BICO was hired to undertake the Energy Auditing and establishing the actual size of a generating set that have to be purchased.  
**Outcome:** Analysis of the installed loads and future plans of TPC and the current power consumption trends was carried out and a technical report was submitted  
**Date:** April, 2000

**7.13 Title:** Cooling load determination for the Kijangwani Post Office in Zanzibar  
**Client:** Tanzania Posts Corporation, Dar es Salaam, Tanzania  
**Tasks:** TPC was facing problems with its storage of documents and the working conditions since the failure of the central cooling system for the Kijangwani Post Office in Zanzibar. The service of determining the necessary cooling load and recommendations on the window type air conditioners to be installed was requested.

**Outcome:** Survey of the Kijangwani and Zanzibar on its climate and weather as well as the heat loading of the building was carried out. The cooling load was determined and subsequently the size and type of air conditioners needed recommended in a technical report submitted  
**Date:** April 2000

**7.14 Title:** Strategic Rolling Plan for the National Institute of Transport  
**Client:** National Institute of Transport, Dar es Salaam, Tanzania  
**Tasks:** National Institute of Transport is faced with new challenges which make the future development of the institute so uncertain. Because of this reason, through the World Bank support, the institute contracted BICO the task of developing its strategic rolling Plan for 2003/2004 - 2008/2009.  
**Outcome:** The Strategic plan was developed and a report to the effect submitted to the institute  
**Date:** December 2003

**7.15 Title:** Training Needs Assessment to meet the Strategic Rolling Plan requirements for the NIT  
**Client:** National Institute of Transport, Dar es Salaam, Tanzania  
**Tasks:** National Institute of Transport is faced with new challenges which make the future development of the institute so uncertain. Following the developed Strategic Rolling Plan for the NIT, training needs assessment was deemed necessary in order to make the academic and administrative staff able to perform their function well. Because of this reason, through the World Bank support, the institute contracted BICO the task of carrying out Training Needs Assessment.  
**Outcome:** The study was carried out and a training program developed for the said staff.  
**Date:** January 2004

**7.16 Title:** Executive Training Program for NIT Academic and Management Staff on Critical Skills  
**Client:** National Institute of Transport, Dar es Salaam, Tanzania  
**Tasks:** Critical skills deemed necessary for the said staff were developed from the Training Needs Assessment. The necessary courses were offered.  
**Outcome:** Training program and training materials as well as presentation of the necessary courses.  
**Date:** April - May 2004

**7.17 Title:** Training Needs Assessment to meet the Strategic Rolling Plan requirements for the VET Training Centers in Tanzania  
**Client:** VETA, Dar es Salaam, Tanzania  
**Tasks:** VETA is faced with new challenges which make the future development of the VET centers so uncertain. Following the developed Strategic Rolling Plan for the VETA, training needs assessment was deemed necessary in order to make the training staff able to perform their function well. Because of this reason, through the OPEC support, the VETA contracted BICO the task of carrying out Training Needs Assessment.  
**Outcome:** The study was carried out and a training program developed for the said staff.  
**Date:** July 2004

**7.18 Title:** Training of 200 Vocational Instructors Under OPEC Fund (Project No. 812P)  
**Client:** VETA, Dar es Salaam, Tanzania  
**Tasks:** Critical skills deemed necessary for the said staff were developed from the Training Needs Assessment. The necessary courses were offered.  
**Outcome:** Training program and training materials as well as presentation of the necessary courses carried out throughout Tanzania from October 2004 to January 2005.

**Date:** October, 2004 - January 2005

**7.19 Title:** Development of a Policy on Academic quality in Teaching and Learning at the University of Dar es Salaam

**Client:** Chief Academic Officer, University of Dar es Salaam

**Outcome:** Draft policy stipulating the policy statements and procedures for the quality in teaching and learning at the University of Dar es Salaam

**Date:** August – December, 2005

**7.20 Title:** Energy Auditing and development of energy policy for the University of Dar es Salaam

**Client:** Chief Administrative Officer, University of Dar es Salaam

**Outcome:** Carried out an energy audit which identified the areas of energy savings. From the established opportunities for reducing energy needs, a draft policy stipulating the policy statements and procedures for the energy management and conservation at the University of Dar es Salaam

**Date:** March, 2005 – February, 2006

**7.21 Title:** Study of Effective Utilization of VETA Equipment Supplied under OPEC Project

**Client:** Director General, VETA, Dar es Salaam

**Outcome:** Carried out an inventory and advise VETA on effective utilization of Facilities in the Regional VET Centers

**Date:** March, 2012 – February, 2013

## **8. MAJOR AWARDS**

8.1 **Tanzanian Government Scholarship for Bachelor of Science in Engineering (B.Sc. (Eng))** in Mechanical Engineering, University of Dar es Salaam, Tanzania, 1980-84

8.2 **Best Final Year Projects Awards, Department of Mechanical Engineering, University of Dar es Salaam, 1984**

8.3 **Monbusho Scholarship** for undertaking Japanese Language Course at Nagoya University (1985/86) **and Masters in Engineering** Program at Toyohashi University of Technology (1986-88)

8.4 **Monbusho Scholarship for Doctor of Engineering (Dr. Eng.)** degree program at Toyohashi University of Technology, Japan (1993-96)

8.5 **Japan Society for Promotion of Science and Technology (JSPS) Future Research Partial Sponsorship**, to carry out research and environmental related subjects at the Toyohashi University of Technology, Japan (Aug. 2000-Sept. 2001)

8.6 **Japan Society for Promotion of Science and Technology (JSPS) Fellowship** for Foreign Researcher, to carry out research and environmental related subjects at the Toyohashi University of Technology, Japan, October, 2001- September 2002.

8.7 **Award for Honorable Mention Technical Poster**, Award for Contribution at the 19<sup>th</sup> Annual International Coal Conference, Pittsburgh Coal Conference, USA, November 2002

## **9 COURSES TAUGHT AT THE UNIVERSITY OF DAR ES SALAAM**

9.1 **EG 106 Engineering Mechanics.** This course covers the static analysis of engineering systems and is taught to first year undergraduate students. I was engaged in teaching and guiding students during tutorial sessions of this course.

9.2 **EG 101 Engineering Drawings.** This course covers the drawing and analysis of engineering systems and is taught to first year undergraduate students. Assist in teaching and guiding students during tutorial sessions.

9.3 **ME 228 Fluid Mechanics.** Lecturing fundamentals of fluid mechanics to undergraduate students at UDSM



- 9.4 **ME 226 - Thermodynamics.** A course for undergraduate students at the then Faculty of Engineering, UDSM
- 9.5 **ME 426 Turbo-machinery.** This course covers the analysis of turbo-machinery systems and power plant analysis. It entails design considerations and developments of hydraulic, steam and gas turbines. This is the course offered to final year students.
- 9.6 **ME 326 Internal combustion engines.** This is the course done during the 3rd year of undergraduate studies at the University of Dar es Salaam, Tanzania. It covers the theoretical and practical analysis of engines. The course concludes with heat transfer treatments.
- 9.7 **ME 338 - Refrigeration and Air conditioning.** A course offered to final year students which equips the students with analytical and practical skills of such systems.
- 9.8 **ME 470 - Renewable Energy Technologies.** This covers the design of combustors and the modeling of the processes involved in renewable systems. Emphasis is placed on the use of locally available materials.
- 9.9 **ME 470 - Industrial Energy Management and Conservation.** This is an optional offered at the then Faculty of Engineering. It covered industrial energy losses and their controls. Procedures for energy auditing and heat transfer analysis.
- 9.10 **IS 131 - Introduction to Informatics and Micro-computers.** This is course is compulsion to students in Computers Science Department as well as others such as Law, Arts and so on. It provides an introductory treatment of computers, including practical applications.
- 9.11 **IS 061 - Design and Implementation of Web Pages.** This is a course offered to students taking Diploma in Computer Science, Department of Computer Science, University of Dar es Salaam. It introduces the basics of web page development
- 9.12 **IS 055 - Object Oriented Design and Analysis.** This is a course offered to students taking Diploma in Computer Science, Department of Computer Science, University of Dar es Salaam. It introduces the basics of web page development
- 9.13 **EN 338 - Computer Applications in Energy Engineering.** Taught at the Department of Energy Engineering, this course is intended to introduce the students to the use of computers in energy engineering undertakings. Covered here includes data acquisition, control, simulations and data processing.
- 9.14 **MG 603 - Principles of Environmental Management.** Course for Masters Students taught at the Faculty of Mechanical and Chemical Engineering, University of Dar es Salaam. The course covers topics in Environmental Management techniques.
- 9.15 **EN 617 – Optimization of Energy Systems.** A one Semester Course taught to the MSc (Renewable Energy) students at the University of Dar es Salaam

## **10. SUPERVISION OF STUDENTS**

### **10.1 Postgraduate**

- 10.1.1** Khairil, Dr. Eng. (Ecological Engineering), Study on Coal Combustion Characteristics and Ash Behaviors for Pulverized Coal Injection Technology in Blast Furnace, Toyohashi University of Technology, Japan, **2001**
- 10.1.2** Yao, Hong, Dr. Eng. (Ecological Engineering), Study on Fundamental Emission Characteristics of Trace Metal Compounds and their Control in Combustion Processes, Toyohashi University of Technology, Japan, **2002**
- 10.1.3** Kapumbe, J.B., M.Sc. (Energy Engineering), Influence of Speed Governor Characteristics on the Stability of Engine Operated at Low Speeds, University of Dar es Salaam, Tanzania, **2004**
- 10.1.4** Bogohe, S.C. (HD/T.38/04), MEM, Effects of Population Pressure and Urban Development on Land Degradation: A case Study of Dar es Salaam City, **University of Dar es Salaam, 2006**
- 10.1.5** Lugano, Wilson, Ph.D., Study on the influence of moisture content on the high temperature gasification of biomass, **University of Dar es Salaam, October 2012**

- 10.1.6** Gongo, Paul S.M., MEM, Environmental Impacts of Coal Mines: A Case Study of Kiwira Coal Mines Tanzania, **University of Dar es Salaam, 2007**
- 10.1.7** Lwekaza, Jones. (HD/T.40/04), MEM, Impact of Trunk Road Construction on the Environment: A Case Study of Dodoma – Manyoni Road, **2007**
- 10.1.8** Materu, M.R. (HD/TP.444/04), MEM, Sustainable Waste and Sanitation Management in Congested Informal Settlements in Dar es Salaam City, A case of Buguruni, Manzese and Tandale, **2008**
- 10.1.9** Raphael Chediell, Management of Electronic Wastes: A case Study of the University of Dar es, **2008**
- 10.1.10** Msuya, A.A.. (HD ), MEM, Prediction of Future Household Energy Mix for Dar es Salaam City, **2009**
- 10.1.11** Ndesamburo, Gilbert (HD/TP 121//2007), MEM, Evaluation of Performance of Biogas Programs in Tanzania, **2009**
- 10.1.12** Omari, A. (HD ), M.Sc. (Energy Engineering), Prediction of Future Energy Mix for Tanzania, **University of Dar es Salaam, 2009**
- 10.1.13** Ismail, Joseph (HD ), MEM, Networking for Waste Lead Management in Dar es Salaam City, **2008**, (on going)
- 10.1.14** Mwakipesile, D. (HD ), PhD in Energy and Environment, Department of Mechanical and Industrial Engineering, University of Dar es Salaam (Registered 2010)
- 10.1.15** Omari, Athumani (HD ), PhD in Energy and Environment, Department of Mechanical and Industrial Engineering, University of Dar es Salaam (Pre-registration 2010)
- 10.1.16** Kichonge, PhD in Energy Planning, Nelson Mandela African Institute of Science and Technology (Registered 2011)
- 10.1.17** Lujaji, Frank, , PhD in Energy Planning, Nelson Mandela African Institute of Science and Technology, (Registered 2012)
- 10.1.18** Koshuma, K. (HD ) PhD in Energy Systems, University of Dar es Salaam, Department of Mechanical and Industrial Engineering, (Pre-registered stage 2012)

## **10.2 Supervised Undergraduate Projects**

- 10.2.1 Mathematical Modeling of internal combustion engines operations and processes, 1997
- 10.2.2 Design of drier systems, 1997
- 10.2.3 Appropriate technologies, 1998
- 10.2.4 Waste Lead Management in Dar es Salaam City, 2004
- 10.2.5 Wastes Management in Dar es Salaam Beaches, 2004
- 10.2.6 Waste Oil Management Strategies, 2004
- 10.2.7 Modeling of engine processes, 1999
- 10.2.8 Scrap Tyre Management, 2005
- 10.2.9 Waste Management by Materials Accounting at UDSM, 2005,
- 10.2.10 Energy Recovery from Scrap Tyres, 2006
- 10.2.11 Improvement of Rotary Plough for Local Manufacturing, 2006
- 10.2.12 Thermodynamic Modeling of Biogas Production Process, 2006
- 10.2.13 Accidents in Tanzania, 2007
- 10.2.14 Further developments of Waste Oil use as an energy Source, 2007
- 10.2.15 Heat Recovery In Power plants, 2008
- 10.2.16 Waste Oil to Energy Conversion, 2009
- 10.2.17 Wood/charcoal stove testing, 2009,
- 10.2.18 Solar energy application to mobile phone towers in Tanzania, 2009



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**Prof. Dr. Eng. Iddi S.N. Mkilaha**  
**Arusha, TANZANIA**

**March 8, 2014**