

CURRICULAR VITAE

PROF. JOHN MMARI ONYARI

1.0 Personal details

Marital Status: Married

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2.0 Education / Qualifications

<u>Institution(s)</u>	<u>Major/Area</u>	<u>Degree</u>	<u>Year</u>
University of Connecticut	Dental Polymer resins	Postdoc	1998/9
University of Connecticut (Institute of Materials Science)	Polymer Chemistry (Fulbright Scholar)	PhD	1996
University of Connecticut	Polymer Chemistry (Fulbright Scholar)	MSc	1994
University of Nairobi	Environmental Chemistry	MSc	1986
University of Nairobi	Honors Chemistry (Upper 2 nd Class)	B.Sc	1980

Post-Graduate Course:

University of Zimbabwe	Postgraduate Certificate (Applied Limnology)	1983
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3.0 Teaching & Work experience

<u>Position</u>	<u>Department</u>	<u>Institution</u>	<u>Dates</u>
Board member	KMFRI	Kenya Marine Fisheries Research Institute	2008-6/2014
Associate Professor	Chemistry	University of Nairobi	11/2012-2014
Senior Lecturer	Chemistry	University of Nairobi	2004 - 11/2012
Postdoctoral Fellow	Institute Materials Science	University of Connecticut	1998 - 1999
Lecturer	Chemistry	University of Nairobi	1996 - 2004
Tutorial Fellow	Chemistry	University of Nairobi	1989 - 1996
Research Officer	TMDRC	Kenya Medical Research Institute	1998 - 1989
Research Associate	Chemistry	Hampton University, Virginia, USA	1985 - 1986
Assistant Research Officer	Environ. Chemistry	Kenya Marine Fisheries Res. Inst.	1981 - 1988

3.1 Board Experience and other Assignments

1. Chairman-Risk Management & Board Audit Committee, KMFRI (2009=6/2014)
2. **Strategic Leadership and Change management** workshop for Directors of State Corporations, Kenya Institute of Administration, 5-6th November 2010.
 - Vision 2030 Improving national competitiveness.
 - Leadership role of the Board.
 - Corporate Strategy and managing for results.
 - Board assessment & evaluation tools.
 - Leadership for organizational transformation.
2. KMFRI board of management workshop at Sun n sand hotel, 10th-13th November 2009
 - The Role of Science in National Development).
 - Governance of State Corporations.
 - Budgetary issues in State Corporations.
 - Strategic Institutional Management.
 - Leadership and Team Building.
3. Induction Programme for members of State Corporations Boards: 6th February 2009, Kenya Institute of Administration.
 - Capacity building of Management Boards of State Corporations.
 - Corporate Governance.
4. Environmental Management for Business.
5. Skills: **Occupational Health and Safety**; Environmental Audits, Environmental Impact Assessment; Corporate Social Responsibility; Green Business Plan; Climate change and adaptation, Environmental laws, Environmental Management Systems, ISO 14000 etc.

3.2 External Examiner (Examinations): Kenyatta University, Department of Chemistry, Nairobi, Kenya (2013/2014).

4.0 External supervision of Postgraduate students

1. University of Nairobi (Departments of Chemistry, Botany, Zoology, Geography, Mechanical Engineering & Institute of Nuclear Science)

2. Jomo Kenyatta University of Agriculture & Technology: Department of Mechanical Engineering.
3. Egerton University, Njoro: Department of Chemistry

4.1 Phd Thesis supervised (Completed)

1. **Addis Kebede Teschome (2012)**. Diversity of Chemical & Mechanical properties of wild Silk Fibres in Africa, PhD student, University of Nairobi- **(Completed)**. (Supervisors-Dr Kabaru, Dr Onyari & Dr Suresh K. Raina,).
2. **Wabomba John Namakwa (2011)** Kinetics and equilibrium studies of single and multi-component metal Ion Sorption on a micaceous mineral of Kenyan origin. Phd, University of Nairobi, Department of Chemistry - **Completed**. (Supervisors-Prof Shiundu & Dr Onyari)
3. **Mwaguni SM (2009)**. The effects of tourism on the environment and its implications on the conservation of Coastal resources (University of Nairobi-Geography & Environmental studies). PhD -**Completed**. (Supervisors-Prof Elias Ayiamba & Dr Onyari).
4. **Nyunja J (2009)**. Food web structure in a tropical mangrove - seagrass ecosystem, PhD, School of Biological Sciences, University of Nairobi- **Completed**. (Supervisors-Prof Ntiba, Prof Mavuti & Dr Onyari).
5. **Najma Dharani (2006)**. An Ecology Study of Factors that Influence growth and distribution of Acacia Xanthophloea in Lake Nakuru National Park in Kenya- -Ph.D, Department of Botany, UON-2006)-**Completed**. (Supervisors-Prof Kinyamario, Dr Onyari & Prof Mavuti).

Continuing Ph. D. Research Student & Research Project:

6. **Muinde Veronica (2014)** Adsorption of organophosphorus Pesticides and Organic dyes onto Synthetic and Natural Polymers and their Biodegradation using selected Micro-organisms (ongoing) (Supervisors- Prof Onyari, Dr Benson Wamalwa & Dr John Wabomba).
7. **Amboga Davis A (2013)** Biosorption of heavy metal ions from aqueous solutions using macrophytes *Vossia cuspidata* and *Cyperus papyrus*, PhD (Ongoing) University of Nairobi, Department of Chemistry. (Supervisors- Prof Onyari, Dr Ali Salim & Dr John Wabomba).
8. **Osawa william Otta (2013)** Enzymatic Preparation of Polyunsaturated Fatty acids and Biodiesel from Fish Wastes and Non-edible Plant Oils, Phd (Ongoing) (Supervisors- Prof Onyari, Prof Mulaa & Dr. Pradeepta Kumar Sahoo).

9. Wycliffe Chisutia Wanyonyi (2013). **Isolation and Characterization of Lignin-modifying enzymes from White rot fungi for Bio-Pulping and Bioremediation Applications**, PhD (Ongoing). (Supervisors-Prof Shiundu, Prof Onyari & Prof Mulaa).

4.2 Msc Thesis supervised

10. Ali Shee (2014) Adsorption of selected dyes using Coconut husk and Mangroves, MSc thesis UON, Department of Chemistry. **(Onyari, Munga & Wabomba)**
11. Chanzu Harry A (2012). Biosorption of Organic dyes using Spent Brewery grains & Polylactide blend films in Batch and Continuous Systems, UON, Department of Chemistry. **(Onyari & Shiundu)**
12. Bosben Kibet B (2011). Assessment of Trace element content in the Foodsuffs commonly consumed in some parts of Rift Valley in Kenya. MSc (INS)-**Completed (Maina & Onyari).**
13. Wanyonyi WC (2011). Biosorption of Organic Dyes from Aqueous solution using Eichhornia crassipes from Lake Victoria. MSc (Chemistry)-**Completed.** **(Onyari & Shiundu).**
14. Amboga DA (2011). Biosorption of heavy metals using Water hyacinth: Adsorption properties and technological assessment. MSc (Chemistry)-**Completed.** **(Onyari & Shiundu).**
15. Herbert Wanjala (2008) Properties and Performance testing of Biodiesel from Jatropha curcas and its blends. **Completed.** **(Onyari, Shiundu & Mulaa).**
16. Agoi Caroline Vugutsa (2010). Dye Adsorption characteristics by two unmodified Lignocellulosic biomass materials (Telfaria pedata and Luffa cylindrical) in batch and fixed bed systems-**Completed.** **(Shiundu & Onyari).**
17. Timothy Muthaura Mugambi, "Removal of Textile Dyes from Aqueous Solutions using *Luffa Cylindrica* of Kenyan Origin: Kinetics and Equilibrium Sorption Studies"; Thesis **Completed.** (August, 2009). **(Shiundu & Onyari).**
18. Kimilu Richard Kyalo (2007). A Study of Jatropha Oil Methyl Ester as an alternative fuel for Compression Ignition engines, MSc Mechanical Engineering. **Completed.** **(Nyangaya & Onyari).**
19. Obadiah Maube (2007). A Study of Waste Kitchen Oil Methyl ester as an alternative for Compression Ignition Engines, MSc Mechanical Engineering. **Completed.** **(Nyangaya & Onyari).**
20. Osawa W. Otta (2007). Levels of Fluoride and selected heavy metals and their Impact on River Kimwarer Environment in Kerio Valley, Kenya, MSc, Egerton University, **Completed.** **(Nguta & Onyari).**
21. Kamau Patrick Hinga (2007). Recycling of Rubber Chips into Composite Elastomers, MSc, JKUAT, **Completed.** **(Onyari & Kihui).**

22. Benjamin N. Kyalo (2005). Bioavailability of Essential Trace Elements in Traditional foodstuffs of the Kamba Community in Kenya, MSc, INS, UON. **Completed.** **(Maina DM, Njenga LW & Onyari).**
23. Kaboro Beth Mwhaki (2008). Assessment of Health Effects of SO₂, NO₂. lead and PM10 from vehicular emissions: A Case study of Eastleigh Area, Nairobi, Institute of Nuclear Science, UON-Msc degree. **Completed.** **(Maina & Onyari).**
24. Wilson Gichuhi Kamundia (2004/5). Influence of selected solutes on copper (II) removal from aqueous solutions using a micaceous mineral of Kenyan origin, MSc, Department of Chemistry. **Completed.** **(Shiundu & Onyari).**
25. Namwiba Benson Maende (2004). Characterization of germplasm of selected medicinal herbs used in the Maasai Region of Kenya, MSc, UON. **Completed.** **(Onyari & Maina).**
26. Muohi A. Wairimu (2002). Occurrence of Heavy Metals in Sediments, Fish Species and Oysters from Mtwapa, Port Reitz, Makupa and Shirazi Creeks along the Kenyan Coast, MSc, UON, 168p,- **Completed.** **(Onyari, Mavuti & Omondi).**
27. Msafiri P.W (2002). The Limnology and Management of Thika Dam, Ndakaini, Kenya, MSc, UON - **Completed.** **(Mavuti & Onyari).**
28. Francis Orata (2001/2002). Determination of Heavy Metals in Sediments, Aquatic Plants and Fish Species from Lake Victoria, MSc, UON. **Completed.** **(Onyari & Wandiga).**
29. Mutune (2002). Determination of the Concentrations of Trace Metals in a Variety of Drinking Juices, MSc, UON. **Completed.** **(Onyari & Maina).**
30. Attahiru Mohammed Stephen (2002). “Metal Ion Sorption by a Locally available natural polymineral adsorbent.” MSc, UON. **Completed.** **(Shiundu & Onyari).**
31. Samson O. Omondi (2005). “Determination of heavy Metals in *Lates niloticus* and *Caridina nilotica* from Winam Gulf of Lake Victoria,” Msc, UON. **Completed.** **(Onyari & Maina).**

Continuing M.Sc. Research Students & Research Projects:

32. Kiplagat SC (2014). **Extraction and Characterization of Gelatin From Fish Scales and Potential Industrial Applications, MSc Chemistry (ongoing).**
33. Ngugi F (2013) Adsorption of heavy metals from aqueous solutions using Mangroves from Kenyan coast, MSc Chemistry (ongoing).

34. Chesori RC (2010). Determination of Elemental Concentrations in Edible Seaweeds from the Kenyan Coast using X-Ray Fluorescence Technique. MSc (Nuclear Science & Technology)-**Ongoing**. (Maina & Onyari).
35. Kundu BN (2010). Evaluation of Liquid Biofuel and their Blends with Kerosene as Alternative Fuels for Lighting and Cooking. MSc (Chemistry)-**Ongoing**. (Kithinji, Onyari & Njenga).
36. Mogire DN (2013). Biodiesel production from Candlenut and *Calodendrum capense* seeds: Process design and technological assessment. MSc (Chemistry)-**Completed**. (Onyari, Shiundu & Mulaa).

SELECTED UNDERGRADUATE RESEARCH PROJECTS SUPERVISED:

1. Florence Wanjiki Maina (2013) Optimization of PVC Injection Process parameters based on Material Qualities (Hardness and Specific Gravity) to Establish the best Control System to Optimize the Efficiency and Quality of the Process, BSc dissertation-UON-Department of Chemistry.
2. Sitawa Byron Musumba (2012), Removal of Colour from crude Cotton seed oil using local materials. BSc dissertation-UON-Department of Chemistry.
3. Sarah Njoroge (2011) Biosorption of trace heavy metals in aqueous solutions using Spent Brewery Grains. BSc dissertation. UON-Department of Chemistry.
4. Grace Dzidza Tunje (2010). "Biosorption of Organic Dyes using Spent Brewery Grains"; BSc dissertation, UON-Department of Chemistry.
5. Brunah Akinyi (2009) "Biosorption of trace metals using a locally available Plant Material, BSc dissertation, UON-Department of Chemistry.
6. Victor Ochieng' Jaoko (2008). "A Study of *Calodendrum Capense* as an Alternative Fuel." UON-Department of Chemistry.
7. S.L. Temba, (2006). "Adsorption Characteristics of Dyes from Aqueous Solution by a Natural Marine Plant (*Carteriospongia Foliascens*) and Oyster Nut (*Telfairia Pedata*)", BSc dissertation, UON-Department of Chemistry.
8. E.K. Okworo, "Testing the Efficacy of *Luffa Cylindrica* in Ink Removal from Aqueous Solutions", (2006). BSc dissertation, UON-Department of Chemistry.
9. S. Malimo, "Extraction and Analysis of Oil from Oyster Nut (*Telfairia Pedata*), (2006). BSc dissertation, UON-Department of Chemistry.

5.0 Academic Publications: Refereed publications.

5.1 Publications:

1. Wycliffe Chisutia Wanyonyi, John Mmari Onyari, Paul Mwanza Shiundu, Francis Jackim Mulaa. **Enzymatic Decolorization of Malachite Green Dye by a Newly Isolated Bacillus Cereus Strain wwcp1**, *IOSR Journal of Environmental Science, Toxicology and Food Technology* e-ISSN: 2319-2402. Volume 8, Issue 12 Ver. III (Dec. 2014), PP 58-64.
2. W. O. Osawa W.O, Onyari JM, Sahoo PK , Mulaa FJ (2014). **Process optimization for production of biodiesel from croton oil using two-stage process**, *IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT)* e-ISSN: 2319-2402. Volume 8, Issue 11 Ver. III (Nov. 2014), PP 49-54.
3. Ali Shee, John Mmari Onyari, John Namakwa Wabomba, Daniel Munga (2014). **Methylene Blue Adsorption onto Coconut husks/Poly lactide Blended Films: Equilibrium and Kinetic Studies**, *Chemistry and Materials Research* www.iiste.org ISSN 2224- 3224 (Print) ISSN 2225- 0956 (Online) Vol.6 No.11, 2014
4. Davis Amboga Anzeze , John Mmari Onyari , Paul Mwanza Shiundu, John W Gichuki (2014). **Equilibrium and Kinetics studies for the biosorption of aqueous Cd (II) ions onto *Eichhornia crasippes* biomass**, *IOSR Journal of Applied Chemistry (IOSR-JAC)* e-ISSN: 2278-5736. Volume 7, Issue 1 Ver. II. (Feb. 2014), PP 29-37
5. Wycliffe Chisutia Wanyonyi* John Mmari Onyari, Paul Mwanza Shiundu (2014) **Adsorption of Congo Red Dye from Aqueous Solutions Using Roots of *Eichhornia crassipes*: Kinetic and Equilibrium Studies**, *The International Conference on Technologies and Materials for Renewable Energy, Environment and Sustainability, TMREES14*, Energy Procedia (2014)
6. **Davis Amboga Anzeze, John Mmari Onyari, Paul Mwanza Shiundu, and John W Gichuki** (2014). **Biosorption of Zn (II) ions from aqueous solutions by water hyacinth (*Eichhornia crasippes*): Equilibrium and Kinetic studies**, *International Journal of Innovation and Scientific Research*, ISSN 2351-8014 Vol. 8 No. 2 Sep. 2014, pp. 224-233
7. **Davis Amboga Anzeze, John Mmari Onyari, Paul Mwanza Shiundu, John W Gichuki** (2014) **Adsorption of Pb (II) ions from aqueous solutions by water hyacinth (*Eichhornia crassipes*): Equilibrium and Kinetic studies**, *International Journal of Environmental Pollution and Remediation* Volume 2, Year 2014 Journal ISSN: 1929-2732

8. Wycliffe Chisutia Wanyonyi, John Mmari Onyari, Paul Mwanza Shiundu (2013) Adsorption of Methylene Blue Dye from Aqueous Solutions Using *Eichhornia crassipes*, Bulletin of Environmental Contamination and Toxicology , July 2013
9. Harry Amuguni Chanzu • John Mmari Onyari, Paul Mwanza Shiundu (2012), Biosorption of Malachite Green from Aqueous Solutions onto Polylactide/Spent Brewery Grains Films: Kinetic and Equilibrium Studies, J Polym Environ, DOI 10.1007/s10924-012-0479-5.
10. Addis Teshome, John M. Onyari, Suresh K. Raina, Jacques M. Kabaru, Fritz Vollrath (2012), Mechanical and Thermal Degradation Properties of Silk from African Wild Silkmoths, J. APPL. POLYM. SCI, 5-15, DOI: 10.1002/APP.37873.
11. Addis Teshome, Fritz Vollrath, Suresh K. Raina, J.M. Kabaru, J. Onyari (2012). Study on the microstructure of African wild silk cocoon shells and fibers, International Journal of Biological Macromolecules 50 (2012) 63- 68.
12. David M. Maina, Lydia W. Njenga, John M. Onyari, Benjamin N. Kyalo (2012), Trace Element Concentrations in Some Traditional Diets Consumed in Selected Parts of Eastern Province of Kenya, Journal of Environmental Protection, , 3
13. Kimilu R. K.1, Nyang'aya J. A.1 and Onyari J. M. (2011). The effect of Temperature and blending on the specific gravity and viscosity of Jatropha Methyl ester, Journal of Engineering and Applied Sciences, VOL. 6, NO. 12,97-105, DECEMBER 2011.
14. Maube Obadiah Mwanzi ,Nyang'aya James Akuno and Onyari John Mmari (2011). Evaluation of Chemical and Physical Properties of Biodiesel Produced from Used Edible Vegetable Oil, Journal of Agriculture, Pure and Applied Science and Technology, 14p. ISSN 2073-8749.
15. Teshome A, Raina SK, Vollrath F, Kabaru JM, Onyari J, Nguku EK (2011), Study on weight loss and moisture regain of Silk Cocoon shells and Degummed Fibers from African Wild Silkmoths, Journal of Entomology 8(5): 450-458.
16. Dharani N, Onyari JM, Kinyamario JI, Maina DM and Mavuti KM (2010), Distribution of Cd and Zn levels in Soils and Acacia xanthophloea Benth. From Lake Nakuru National Park, Kenya, Bulletin of Environmental Contamination and Toxicology, vol 85, Nos 3, 318-323.
17. Nguta CM, Osawa WO, Onyari JM & Onyiego (2010). Levels of Selected Heavy Metals & Fluoride in water around Fluorspar Factory in Kerio Valley, Kenya, Kenya J Sci Tech Inn. Vol 1, pp 12-22, June 2010
18. Onyari JM and Huang (2009), Synthesis and Properties of Novel Polyvinyl alcohol-Lactic acid Gels, Journal of Applied Polymer Science , 113, 2053-2061.

19. Nyunja, M. Ntiba, J. Onyari, K. Mavuti, K. Soetaert, S. Bouillon (2009) Carbon sources supporting a diverse fish community in a tropical coastal ecosystem (Gazi Bay, Kenya), *Estuarine, Coastal and Shelf Science*, Volume 83, Issue 3 - selected, pp. 265-378 (10 July 2009).
20. Onyari JM, Mulaa F, Muia J and Shiundu P (2008), Biodegradability of PLA, Preparation and Properties of PLA/Gum Blends, *Journal of Polymers and the Environment* Volume 16, Number 3 / July, 2008, 205-212.
21. Dharani N, Onyari JM, Maina DM and Mavuti KM (2007), The Distribution of Cu and Pb Levels in soils and *Acacia xanthoploea* Benth. From Lake Nakuru National Park Kenya, *Bulletin Environmental Contamination and Toxicology*,79(2): 172-7.
22. Dharani N, Kinyamario JI and Onyari JM (2006), Structure and Composition of *Acacia xanthoploea* woodland in Lake Nakuru National Park, Kenya, *Africa Journal of Ecology* 44(4), 523-530.
23. Onyari JM and Huang SJ (2003), Triblock copolymers of lactide with poly(ethylene glycol) and Influence of stereochemical composition, *Macromolecular Symposia*, Vol 193,1, pp 143-158
24. Onyari JM and Huang SJ (2003), Preparation and Mechanical Properties of PCL-Cellulose polymer blends, 9th NAPRECA Symposium proceedings, August, pp 70-74.
25. Muohi AW, Onyari* JM, Omondi JG and Mavuti KM (2003), Heavy Metals in sediments from Makupa and Port-Reitz creek systems: Kenyan Coast, *Environment International*, 28, 639-647
26. Attahiru S, Shiundu PM, Onyari JM and Mathu EM (2003), Removal of Cu (II) from an aqueous solution using a micaceous mineral of Kenyan origin, *Adsorption Science Technology* , 21 (3), 269-283
27. Muohi AW, Onyari* JM, Omondi JG and Mavuti KM (2003), Heavy metal distribution in surface sediments from Mtwapa and Shirazi Creeks, Kenyan coast, *Bulletin Environmental Contamination and Toxicology*, 70, 1220-1227
28. Huang SJ and Onyari JM, (1996) Multicomponent polymers of poly(lactic acid) macromonomers with methacrylate terminal and copolymers of poly(2-hydroxyethyl methacrylate), *J.M.S.-Pre Appl.Chem.*, A33(5),571-584
29. Huang SJ and Onyari JM (1995), Multi-component comb shaped and networks containing poly(lactic acid), *Polym.Mat.Sci.Eng.*,72(1), 137.

30. J.M.Onyari, S.O.Wandiga, G.K.Njenga and J.O. Nyatebe (1991), Lead contamination in street soils of Nairobi city and Mombasa island, Kenya, Bull. Environ. Contam. Toxicol., 46:782-789.
31. Onyari JM and Wandiga SO (1989), Distribution of Cr, Pb, Cd, Zn, Fe and Mn in Lake Victoria sediments, East Africa, Bull. Environ. Contam. Toxicol., 42, 807-813, Bull.Environ,Contam.Toxicol.,42,807-813
32. Wandiga SO and Onyari JM (1987), The concentration of heavy metals: manganese, iron, copper, zinc, cadmium and lead in sediments and fish from the Winam Gulf of Lake Victoria and fish bought in Mombasa town markets, Kenya Journal of Sciences A8(1-2),5-18.

5.3 Other Contributions to literature (Theses).

33. Onyari JM (1996), Multi-component polymers containing polylactic acid, PhD Thesis, University of Connecticut, Institute of Materials Science, Storrs.
34. Onyari JM (1986), Determination of manganese, iron, copper, zinc, cadmium and lead in fish species, and sediments from Mombasa town and the Winam Gulf of Lake Victoria, MSc, 282pp.

5.3 Books

35. Munyua JM and Onyari JM (1996), Introduction to Environmental Management, Jomo Kenyatta Foundation, pp 125, Nairobi, Kenya (1996).

6.0 Recent Oral presentations & Conferences:

1. John M Onyari, Paul M Shiundu, Herbert Wanjala , James Nyangaya & Francis Mulaa (2011). TECHNICAL EVALUATION OF BIODIESEL FROM *JATROPHA CURCAS* AND *CROTON MEGALOCARPUS* BLENDS 40th SACI National Convention &FACS Conference held at WITS, Johannesburg January 16th to 21st, 2011.
2. Onyari JM & Huang SJ (2009). Properties of Biopolymers containing Polyvinyl alcohol. Lactic acid and Poly (ethylene glycol), Biomaterials conference, Pretoria, South Africa.
3. Onyari JM, Nyangaya J, Kimilu RK (2009), Technical evaluation of *Jatropha curcas* as an alternative fuel for compression ignition engines: Case study in Kenya. The 2nd Generation Biofuels & Jatropha World Summit. The conference theme was “Towards

Higher Yields, Large-Scale Production & Exports for the International Market “held at the La Palm Royal Beach Hotel, Accra, Ghana on 28 - 29 May 2009.

4. Onyari JM (2007). Biodiesel from Renewable Resources. Seminar presentation in the Department of Chemistry, Western Michigan University, Kalamazoo, October 4th 2007. <http://www.wmich.edu/chemistry/>
5. Onyari JM (2007). Biodiesel from Croton megalocarpus. 12th NAPRECA Conference, Africana Hotel, Kampala, Uganda, July 22-26th 2007.

7.0 Conferences / Symposia / Seminar & Professional Meetings attended

6. Onyari (2010) attended KMFRI Conference on Aquatic resources of Kenya held on 16-19th Nov 2010 at KWS training Institute, Naivasha (Thematic areas- Fisheries Research & Management, Aquaculture Research & Development, Biodiversity & Ecosystem functions, Limnology & Oceanography, Climate Change, Contemporary Socio-Economic Issues, Policy & Management).
7. Onyari JM was invited as Discussant (Topic assigned: Geothermal power) to Kenya Energy Conference held 7-9 October 2008 at Kenyatta International Conference Centre, Nairobi, Kenya.

8.0 Examination of Theses

1. Appointed as Internal Examiner (2012) for Moses O Oyagi, titled “Synthesis and Characterization of Silver Nanoparticles using tea extracts and their application in Nanobiosensors,” Dept of Chemistry, University of Nairobi.
2. Appointed as Internal Examiner (2012) for Yoseph Atilaw titled “Phytochemical investigation and Structure modification of Antimicrobial principles from Schizogyia Coffaeoides Baill., (Apocynaceae),” Dept of Chemistry, University of Nairobi.
3. Appointed as Internal Examiner (2012) for Daniel Buyinza titled “Phytochemical investigation of Zanthoxylum Holstzianum for Antimicrobial principles, ” Dept of Chemistry, University of Nairobi.
4. Appointed as Internal Examiner (2011) for Michael B Sangale MSc thesis titled “Larvicidal activity of some Flavonoids and their analogues”, Dept of Chemistry, University of Nairobi.
5. Appointed internal Examiner (2010) for Wanyama Peter Juma MSc Thesis titled “Phytochemical and Pharmacological evaluation of Tephrosia purpurea and Eriosema psoraleoides on mating behaviour and isolated tissues,” Department of Chemistry, University of Nairobi.

6. Appointed as Internal Examiner (2009) for Herbert Wanjala Kavunja, MSc Thesis titled “**Properties and Performance testing of Biodiesel from a mixture of *Jatropha curcas* and *Croton megalocarpus* Blends,**” Department of Chemistry, University of Nairobi.
7. Appointed Internal Examiner (2008) for Beth M Kaboro MSc Thesis titled “Assessment of Levels of Urban Air pollutants and Trace Elements in Roadside Soils: A case study in Eastleigh area, Nairobi” Institute of Nuclear Science, University of Nairobi.
8. Appointed Internal Examiner (2007) for John M Mbugua’s MSc Thesis titled “Development of flow injection-hydrate generation-phase separation interfaces for the determination of arsenic in natural waters and rice using atomic absorption spectrometry” Jomo Kenyatta University of Agriculture & Technology, Juja, Kenya
9. Appointed an Internal Examiner for Ms Mbuzukongira Polepole for MSc thesis titled “Assessment of Occupational Radiation Exposures of Artisan Miners of Columbite-Tantalite (Coltan) in the Eastern Democratic Republic of Congo” Institute of Nuclear Science, University of Nairobi.
10. Appointed an Internal Examiner for Ms Salome Muthoni Guchu for PhD thesis titled “Studies on *desmodium* species for the allelochemicals involved in striga suppression,” by Board of Postgraduate studies, Department of Chemistry, University of Nairobi.
11. Appointed an Internal Examiner (2007)for Ms Barabara Mwaka Said’s Master of Science thesis titled “Some Aspects of the Ecology and Fishery of the Mangrove Crab *Scylla serrata* (Forsskal,1755) in Gazi Bay, South Coast-Kenya,” by Board of Postgraduate studies, Department of Zoology, University of Nairobi.
12. Appointed Internal Examiner for Ms. Anne W. Muohi’s Master of Science (Zoology) thesis entitled “Occurrence of heavy metals in sediments, Fish species and oysters from Mtwapa, Port Reitz, Makupa and Shirazi Creeks along the Kenyan Coast” pp 168, by the Director, Board of Postgraduate Studies, University of Nairobi.
13. Appointed Internal Examiner for Mr. G.O. Odhiambo’s Master of Nuclear Science thesis entitled “Assessment of Ozone, Nitrogen oxides, air particulate matter (PM10) and trace elements level in the ambient air of Nairobi city” pp123, by the Director, Board of Postgraduate Studies, University of Nairobi.
14. Appointed Internal Examiner for Mr. O.M. Baruthi’s Master of Science (Mechanical Engineering) thesis entitled “Recycling of plastic wastes in Kenya: A Survey” pp 201, by the Director, Board of Postgraduate Studies, University of Nairobi.
15. Appointed Internal Examiner for Mr. Joseph Simiyu Sirengo’s Master of Nuclear Science thesis entitled “Uptake characteristics of Trace Elements: lead, zinc, cadmium and mercury by selected

- food crops grown along Nairobi river” pp 140, by the Director, Board of Postgraduate Studies, University of Nairobi.
16. Appointed Internal examiner for Mr. Austin Ochieng Aluoch’s Master of Science (Chemistry) thesis entitled “Chemistry and Biological activities of *Zanthoxylum Chalybeum* and *Erythrina excelsa*”, pp213 by the Director, Board of Postgraduate Studies, University of Nairobi.
 17. Appointed Internal examiner for Mr. Nicholas K. Gikonyo’s *Doctor of Philosophy* (Chemistry) thesis entitled “Semiochemical basis of feeding non-preference on waterbuck kobus Defassa by some *Closina morsitans* of Tsetse flies”, pp194 by the Director, Board of Postgraduate Studies, University of Nairobi.
 18. Appointed Internal examiner for Mr. Yugi Peter Ochieng’s Master of Science (Chemistry) thesis entitled “The Distribution of organochlorine pesticide residues in the Marine environment along the coastal region of Kenya” pp133 by the Director, Board of Postgraduate Studies, University of Nairobi.
 19. Appointed Internal examiner for Mr. Bereket T. Yebiyoy’s Master of Science (Chemistry) thesis entitled “The Distribution, Fate and Effects of 14C-DDT in model ecosystems simulating Tropical Freshwater Environment” by the Director, Board of Postgraduate Studies, University of Nairobi.
 20. Appointed Internal Examiner for Mr. Charles K. Mambo’s Master of Science (Chemistry) thesis entitled “The synthesis of Vernolamides from *Vernonia Galamensis* oil” by the Director, Board of Postgraduate Studies, University of Nairobi.
 21. Appointed Internal examiner for Mr. Fred Nyongesa’s Master of Science (Chemistry) thesis entitled “Identification of Some of the host-derived attractant compounds for adult tick, *Rhipicephalus Appendiculatus* from cattle ears” by the Director, Board of Postgraduate Studies, University of Nairobi.
 22. Appointed Internal examiner for Mr. Jeremiah K. Mwaura’s Master of Science (Chemistry) thesis entitled “Investigation of the major chemical components in the roots of *Vernonia Galamensis* Ssp. *Nairobensis*” by the Director, Board of Postgraduate Studies, University of Nairobi.
 23. Appointed Internal examiner for Mr. Abiy Yenesew’s *Doctor of Philosophy* (Chemistry) thesis entitled “Chemical Investigation of two *Erythrina* and two *Milletia* Species (leguminosae) for bioactive constituents” pp437 by the Director, Board of Postgraduate Studies, University of Nairobi.

8.1 External Examiner (Other Universities) (PhD and Master of Science)

1. Appointed as External Examiner (2012) for Orony Nelly Adhiambo, MSc thesis titled “Polycyclic Aromatic Hydrocarbons, Aflatoxins and nitroso compounds in fresh and processed fish from Lake Victoria in Kenya,” Maseno University.
2. Appointed External Examiner (2012) for Agwa Maryline Akinyi, MSc Thesis titled Assessment of Phosphorus loading into Lake Victoria by Rivers Nzoia, Yala, Kisat and Nyalenda Waste Treatment plants in Kenya, Masinde Muliro University of Science & Technology.
3. Appointed External Examiner (2012) for Selly Jemutai Kimosop, MSc thesis titled “The Dissipation behavior of Carbofuran and Diuron in Soils within Nzoia River Drainage basin, Kenya,” Masinde Muliro University of Science & Technology.
4. Appointed External Examiner (2011) for Godfrey Muhwezi, MSc thesis titled **DETERMINATION OF SELECTED HEAVY METAL LEVELS IN MILK FROM SOME DAIRY FARMS, WAKISO DISTRICT** Makerere University, Kampala, Uganda.
5. Appointed External Examiner (2011) for Patric Musungu, MSc Thesis titled “ **Nutrients levels in Winam Gulf** “ Maseno University, Kenya.
6. Appointed External Examiner (2010) for Otieno Peter Odhiambo, MSc Thesis titled “Monitoring of Carbofuran residues in Laikipia and Isiolo districts in Kenya for Ecological Risk Assessment, Maseno University, Kenya.
7. Appointed External Examiner (2009) for Alfred M Okoth MSc thesis titled “Determination of selected heavy metal levels in underground water and soil and analysis of water hardness sources in nyatike-karungu divisions, migori district, Kenya.” **Egerton University, Department of Chemistry, Kenya.**
8. Appointed External Examiner (2008) for David Ongeri PhD thesis titled “Some PhysicoChemical Parameters, Heavy Metal Residue Levels and their Speciation studies in Lake Victoria Basin,” Maseno University, Maseno, Kenya.
9. Appointed External Examiner (2009) for Boniface Muendo’s MSc Thesis titled “Field study of Pesticides residues and enhanced biodegradation of some selected herbicides in the Nzoia sugar belt,” Maseno University, Maseno, Kenya.
10. Appointed Internal Examiner (2009) for William Osawa (2009) MSc Thesis titled “Levels of Fluoride and Selected Heavy Metals and their Impact on River Kimwarer Environment in Kerio Valley-Kenya” **Egerton University, Njoro, Kenya.**
11. Appointed External Examiner for John Mwai Mbugua MSc Thesis titled “Development of flow injection-hydride generation-phase separation interfaces for the determination of arsenic in

natural waters and rice using atomic absorption spectrometry,” by Board of Postgraduate Studies of **Jomo Kenyatta University of Agriculture & Technology, Kenya.**

12. Appointed external examiner for Mr Joseph Nyingi Kamau MSc Thesis titled “Effect of Seasonal Physicochemical Variation on Metal Speciation: Implication on Water Quality at Lake Naivasha, Kenya”, by Board of Postgraduate Studies of **Jomo Kenyatta University of Agriculture & Technology, Kenya.**
13. Appointed external examiner for Mr. Shadrack Munyao Mule’s Master of Science thesis titled “Levels of Cadmium, Lead and Zinc in Soils, Grass, Kale Leaves, Kidney and Liver of Chicken kept around Selected Jua Kali sites in Nairobi, Nakuru and Naivasha” by Board of Postgraduate Studies, **Egerton University, Njoro.**
14. Appointed external examiner for Mr. Ithagu Peter Macharia’s Master of Science thesis titled “Nakuru Municipal Waste Dumping Site as a Source of Heavy Metal Pollution in Soil, Water and Plants” by Board of Postgraduate Studies, **Egerton University, Njoro, Kenya.**
15. Appointed external examiner for Mr. Odero Dishon Raga’s Master of Science (Soil Science and Land Management) thesis entitled “ Heavy Metal Pollution in and around Nairobi river, at Ngara and Gikomba, due to influx of metal wastes from cottage industries in the municipality”, pp140 by the Board of Postgraduate studies, **Sokoine University of Agriculture, Morogoro, Tanzania.**

9.0 Membership of management boards, committees

1. **Board Member (2008-6/2014), Kenya Marine & Fisheries Research Institute.**
2. **Board Member, Career Directions Limited.**
3. **Chairman, Board Audit Committee (2008-6/2014), Kenya Marine & Fisheries Research Institute.**
4. **Member (2008-6/2014), Scientific & Technical Committee. Kenya Marine & Fisheries Research Institute.**
5. **Appointed Member (2012)- Committee to develop the “Open Access policy” for University of Nairobi.**

10.0 Membership of Editorial / Reviewer Committees of Journals & other Scientific publications & Proposals.

10.1 Onyari has reviewed scientific papers for International Journals such the *Journal of Applied and Polymer Science, Environment International and Journal of Polymer Research*.

10.2 21-24 January 2010, Nairobi. Appointed as a Reviewer in the Environment Thematic area, **National Council for Science & Technology**.

10.3 2004 - 2008: Appointed by **VicRes (IUCEA)** based in Kampala, Uganda to review Scientific research proposals for funding.

10.4 Scientific papers review for the **First National Lake Victoria Environment Management Project (LVEMP)/Conference, Challenges and Opportunities in the Management and rational use of the resources of Lake Victoria and its ecosystem**.

10.5 2004: Appointed by International Foundation of Science (IFS), Sweden to review paper for fundin

11.0 Membership of Learned Professional bodies

1. Member of **Kenya Fulbright Association**.
2. Member of **Western Indian Ocean Marine Science Association (WIOMSA)**.
3. Member, **Kenya Chemical Society**
4. Served as Secretary of **Natural Products Research Network for Eastern and Central Africa (NAPRECA-K)**.

12.0 Courses and Training attended

Environmental Management Systems ISO 14000 Training (2008). Kenya Bureau of standards.

13.0 Professional related activities

1. Leadership in Higher Education & Research (LEADHER) Program in Renewable Energy (2012) Collaboration between UON & University of Petroleum & Energy studies, India (Visit to India- **Delhi and Dehradun**), April 30-May 8, 2012.
2. **Appointed as Member by Ministry of Energy-Kenya National Biodiesel Association Taskforce (2008).**

3. 1-2 Feb 2010 Attended Stakeholders' workshop for reviewing **Draft National Biofuel Policy**, Merica Hotel Nakuru.
4. Member of **Strategic Plan team** to develop strategic plan (2005-2010) for **Faculty of Science and College of Biological & Physical Sciences**, University of Nairobi.
5. Participation in VLIR-UON Project.

14.0 Research Projects and Consultancy Services:

14.1 Energy:

- **Alternative Fuels/Biodiesel** from Renewable Resources (Non-edible oils, agro-wastes, cellulosic materials, microalgae etc) and use of renewable energy sources (solar, wind, geothermal) for sustainable Development. Engine testing of Biodiesel blends.

14.2 Plastics & Biodegradable polymers:

- The design, synthesis and characterization of **Bio-/Environmentally degradable polymers**.
- **Recycling of plastics, Composite Materials and Polymer Degradation Studies**.
- **Plastics-Cement Composite building blocks**.

14.3 Environmental Pollution: Marine & Limnology:

- **Marine Pollution and Policy**, Trace elements studies in sediments, fish and biota from Mtwapa, Tudor, Port-Reitz, Shirazi creeks using X-ray fluorescence and/or AAS.
- **Environmental pollution** in Lakes (Victoria, Nakuru, Naivasha, Baringo and Bogoria) and Marine ecosystems and **Global warming pollutants** in Nairobi city.
- **Bioremediation** and development of water purification technologies (phytoremediation using **Renewable Plant biosorbent materials**) and other naturally occurring resources.

14.4 Environmental Management Systems, Environmental Auditing, Environmental Impact Assessment, Environmental Reporting, Occupational Health and Safety, Corporate Social Responsibility:

14.5 Health: Natural products:

- Trace elements analysis in Medicinal plants (Using XRF) from Masailand.

14.6 Completed sponsored projects:

1. World Federation of Science Postgraduate Research students support-2008/2009; 2009/2010 and 2010/11 (Herbert Wanjala, Denis Mogire, Davis Amboga and Harry Chanzu), 2013/2014 (Davis Amboga, Fidelis Ngugi, Omwenga etc).
2. Onyari JM, Namwiba B, Maina DM, characterization of selected medicinal herbs used in the masai region of kenya as suitable sources of disease remedies, AICAD (2005).

15.0 Referees:

1. Prof Shem O Wandiga, University of Nairobi, Department of Chemistry. sowandiga@uonbi.ac.ke
sowandiga@iconnect.co.ke
2. Prof Jack Midiwo, University of Nairobi, Department of Chemistry. jmidiwo@uonbi.ac.ke
3. Prof. Paul M. Shiundu, Deputy Principal-Kenya Polytechnic University, Nairobi, KENYA . Email: pmsiundu@kenpoly.ac.ke
4. Prof. David Huffman, Western Michigan University, Department of Chemistry, Kalamazoo, 387-2865, david.huffman@wmich.edu