



**UNIVERSITY OF NAIROBI
COLLEGE OF BIOLOGICAL AND PHYSICAL SCIENCES
SCHOOL OF PHYSICAL SCIENCES**

DEPARTMENT OF CHEMISTRY

2009/2010 Academic Year

ANNUAL REPORT

DEPARTMENT OF CHEMISTRY ANNUAL REPORT

1.1 INTRODUCTION

The 2009/2010 Academic year went through successfully.

The Department continued to teach its degree programs and to offer service courses to the College of Health Sciences (Pharmacy), College of Architecture and Engineering and College of Agriculture and Veterinary Sciences.

The Department of Chemistry at Kenya Science Campus is fully operational and the students are moving into their fourth year of study.

The department is still offering module II evening programs at both the undergraduate and post-graduate levels. The postgraduate students have already completed their second semester and are to proceed to the second year of study.

Two new undergraduate programs were approved by Senate. They are Analytical Chemistry and Environmental Chemistry. Two other reviewed undergraduate programs in Pure chemistry and Industrial chemistry were also approved by Senate.

1.2 ACADEMIC STAFF MEMBER AND THEIR DESIGNATION

Professors	7
Associate Professors	6
Senior Lecturers	8
Lecturers	15
Tutorial Fellow	6
Assistant Lecture	1
TOTAL	43

2.0 STAFF APPOINTMENTS, PROMOTIONS

2.1 NEWLY APPOINTED/RECRUITED ACADEMIC STAFF

NAME	GENDER	TITLE
Ms. Immaculate Achieng'	F	Tutorial Fellow
Mr. E. Korir	M	Tutorial Fellow

2.2 STAFF PROMOTED

NAME	GENDER	PREVIOUS TITLE	PRESENT TITLE

2.3 STAFF RETIRED, ON LEAVE OF ABSENCE, TERMINATED, DECEASED

NAME	GENDER	TITLE	STATUS
Dr. E. Kituyi	M	Snr. Lecturer	Sabbatical leave
Dr. Wenwa A. Odinga	F	Snr. Lecturer	Leave of absence

3.0 ACADEMIC PROGRAMMES

Undergraduate Programmes

B.Sc. Industrial Chemistry

B.Sc Chemistry

Postgraduate Programmes

M.Sc. in Chemistry

M.Sc. in Environmental Chemistry

5.0 NUMBER OF STUDENTS ADMITTED INTO EACH UNDERGRADUATE PROGRAMME

PROGRAMME

NUMBER

BSc.

BSc –Industrial Chemistry I

6.0 NUMBER OF STUDENTS ADMITTED INTO EACH POSTGRADUATE PROGRAMME

PROGRAMME	NUMBER
M.Sc.	38
Ph.D.	

7. NUMBER OF STUDENTS WHO GRADUATED FROM EACH PROGRAM

Ph.D.	2
M.Sc	
B.Sc Industrial chemistry	

8. NUMBER OF STUDENTS DISCONTINUED ON ACADEMIC GROUNDS

BSc	0
MSc	0

9.0 ONGOING RESEARCH PROJECTS IN CBPS

9.1 Undergraduate research projects

NAME	TITLE	SUPERVISORS
Kyanui K. Daniel	Bohehole water analysis in some selected sites at Syokimau Estate in Athi-River Division	Dr. Yusuf A.O.
Otieno Elvis Juma	Lead, Cadmium, Arsenic and Chromium along Ngong River and Treatment Methods	Dr. F. Oduor
Ooko George Odera	Investigation of Lead and Cadmium Concentrations in Nairobi River and Adsorption Properties of Fish Bone.	Dr. F. Oduor
Gachucha P. Ndiritu	Extraction and characterization of vernonia galamensis oil from vernonia galamensis seeds Solid-phase peptide synthesis of a glucagons analogue using F-moc synthetic protocol	Dr. Yusuf A.O.
Wekulo Chrispinus	Water analysis of some selected boheholes in Matungu Division, Butere-Mumias District	Dr. Yusuf A.O.
Judith Ogolla	Extraction and characterization of vernonia galamensis oil from vernonia galamensis seeds	Dr. Yusuf A.O.
Faith Katungemwania	Phytochemical investigation of the seed pods of <i>Tephrosia aequilata</i>	Prof. Abiy Yenesew
Karani L. Christopher	Phytochemical investigation of the roots of <i>Erythrina abyssinica</i>	Prof. Abiy Yenesew
Wilson K. Tonkei	Further investigation of the roots of <i>Bulbine frutescens</i>	Prof. Abiy Yenesew
Carolyne Chepkirui	Acetylation as a tool to isolate and identify	Prof. Abiy

	unstable bioactive compounds from <i>Erythrina</i> species	Yenesew
Veronicah Osoro	Antiplasmodial phenylanthraquinones from the stem bark of <i>Kniphofia foliosa</i>	Prof. Abiy Yenesew
Nelson Rono Kipng'etich	Analysis of the roots and leaves of <i>Pentas longiflora</i> for antimicrobial compounds	Prof. Abiy Yenesew
Joshua E. Emuruon	Diterpenes and Flavonoids of <i>Psiadia punctulata</i> as potential analgesic agents	Prof. Abiy Yenesew
Nsauti Aisha Bakari	Quinones from <i>Bulbine frutescens</i> and <i>Bulbine capitata</i> as antiplasmodial agents	Prof. Abiy Yenesew
Flora Wambuui Kimani	Larvicidal rotenoids from the stem bark of <i>Millettia usaramensis</i>	Prof. Abiy Yenesew
Mbogo Martin M.	Antiplasmodial activity of compounds from <i>Tephrosia aequilata</i>	Prof. Abiy Yenesew
Kariuki Stephen Ndungo	Antidiabetic compounds from <i>Lannea schimperi</i> roots	Prof. Abiy Yenesew
Manani N.Geoffrey	Antiplasmodial activity of compounds from <i>Erythrina abyssinica</i>	Prof. Abiy Yenesew

9.2 Ongoing Postgraduate research projects (M.Sc)

NAME	TITLE	SUPERVISORS
Ms. Elizabeth Ndunda	Study of polychlorinated biphenyls in sediments and water from Nairobi River	Prof Wandiga S.O. Prof. Shiundu P.M.
Ms. Doris Situma	Analysis of polycyclic aromatic hydrocarbons in ambient air and soils at selected sites within Nairobi City	Prof. Shem O. Wandiga Prof. Paul M. Shiundu
Rose Chiteva	Phytochemical investigation of resins from <i>Commiphora Holtziana</i> in Kenya	PROF. A. Yenesew DR. J.M. Wanjohi Dr. Chikamai
Mr. Isaac Chogii	Potential of synthetically modified surface exudates flavonoids as anti-plasmodial and anti-oxidant principals	Prof. J.O. Midiwo Dr. J.M. Mwaniki
Mr. Kiratu Mburu	Spectrochemical characterization of 2,2,5,5-tetramethyl-3-imidazolidin-1-oxyl nitroxyl free radical ligand	Prof. P.M. Shiundu Dr. J. Onyari
Ms. Meron Gebru	Phytochemical investigation of <i>Rhamnus Prinoidea</i> and <i>Kniphofia Foliosa</i> for	Prof. A. Yenesew Dr. Martin N. Mbugua Dr. Solomon Derese

	antiplasmodial activity	
Mr. M. Cheloti	Phytochemical investigation of some Aloe species of Kenya for anti-plasmodial and anti-microbial activities	Prof. A. Yenesew Dr. J.M. Wanjohi
Mr. Herbert Wanjala Kavunja	Properties and performance testing of biodiesel from Jatropha curcas and its blends	Prof. Abiy Yenesew Prof. J .O. Midiwo Dr. Solomon Derese
Mr. Nicholus Mwendo		Prof. J.O. Midiwo Prof. Abiy Yenesew
Ms. Florence Masese	The investigation and development of monitoring protocol of some pollutants in the Nairobi River basin	Prof. S.O. Wandiga Prof. I.O. Jumba
Mr. Emmanuel C. Ngeywo	Investigating the impact of improved cookstoves in Kenyan schools on PM ₁₀ , CO,CO ₂ ,CH ₄ and N ₂ O levels	Dr. Evans Kituyi Dr. J.P. Kithinji
Mr. Caroline Agoi	Dye adsorption characteristics by two unmodified lignocellulosic biomass materials in batch and fixed bed systems	Prof. Shiundu P.M. Dr. Onyari J.M.
Mr. Nicholas Mwenda	Assessment of pesticide residues in cow milk, water and cow blood from Nairobi West region	Prof. P.M. Shiundu Prof. S.O. Wandiga Dr. Mbaabu Mathiu
Peter Wanyama Juma	Phytochemical and pharmacological evaluation of tephrosia purpurea and eriosema psoraleoides	Prof Abiy Yenesew
Ms. Amina Bakari	A survey of mercury from fluorescent lamps disposal in selected sites in nairobi and environs.	Dr Aluoch and Dr Kituyi
Ms. Begum Nusrat Mutta	Determination of volatile organic compounds (vocs) emitted in petrol stations	Prof Wandiga, Dr Aluoch
Mr. Amboga Davis Anzeze	Adsorption Studies of plant biomass from water hyacinth(eichhornia crassipes) and possible utilization in removal of heavy metals from	Prof Shiundu Dr Onyari Dr Gichuki

	polluted water streams	
Mr. Dennis Ndaya	Biodiesel production from <i>Calodendrum capense</i> seeds: Process design and technological assessment	Dr John Onyari, Prof Shiundu, Dr James Nyangaya, Prof Mulaa
Mr. Evans Nangulu	GIS clustering and mapping pollution from industries within nairobi	Dr Aluoch Austin Dr Martin Marani
Mr. Murimi J. Mbugua.	To improve on lead acid battery manufacture in a more environmental friendly manner	Prof Kamau Dr Guto
Ms. Judith Ngugi Joseph	Chemical analysis of borehole and shallow well water in arid and semi-arid regions of kenya.	Prof Lydia Njenga Dr Kithinji
Mr. Leonard Baraza	Phytochemical investigation of millettia oblata for antiplasmodial and larvicidal principles	Dr S. Derese and Prof Abiy
Mr. Michael Bugigi Sangale	Antioxidant and antiplasmodial activities of structurally modified flavonoids derived from abysnone v & abysnone methyl ether.	Prof Yenesew, Dr Mbugua and Dr Ndakala
Mr. Wanyonyi Peter Namutala	Electroanalytical determination of trace metals using stripping voltammetry technique	
Mr. Rael Obong'o Kaseru	Determination of effectiveness of untreated and edta-treated luffa cylindrica in removal of cr^{3+} and cu^{2+} from waste	Prof Shiundu and Dr Aluoch

	water.	
Mr. Tom Oduor Okumu	Investigation of nutritional components of <i>tylosema fassoglense</i>	Dr David Kariuki, Dr Peterson Momanyi
Mr. Wycliffe Chisutia Wanyonyi	Biosorption of organic dye from aqueous solution using <i>eichhorinia crassipes</i> from lake victoria	Prof Shiundu and Dr John Onyari
Gitari, Florence K. I56/72778/08	Assessment of Polychlorinated Biphenyls (PCBs) in Sediments and Water from Ngong and Mathare Rivers	Prof Wandiga, Prof Shiundu
Ndiritu, Cecilia W. I56/72168/08	Mobility of Heavy Metals, Microorganisms and Hydrodynamics of a Section of Nairobi River	Prof Kamau, Prof Mwaura, Dr Kithinji
Kundu, Bevin N. I56/72040/08	Comparison of Burning effectiveness of Liquid Biofuels and their Blends with Kerosene as Alternative Fuel for Lighting and Cooking	Dr Onyari and Dr Kithinji
Masenge, Edna M. I56/72365/08	Total Petroleum Hydrocarbons in Sediments and Water in Ngong and Mathare River	Prof Wandiga and Prof Shiundu
Muya, Catherine N. I56/71048/09	Electrocatalytic Decomposition of Organochlorine Pollutants	Prof G. Kamau Dr Peterson Guto
Musyoki, Michael I56/72282/08	Phytochemical Investigation of <i>Lannea Schimperi</i> for Bioactive Principles	Prof Yenesew Dr Martin Mbugua
Everlyne Kasima N. I56/72341/08	Phytochemical Investigation of Kenyan <i>Tarchonanthus Camphoratus</i> for Bioactive Principles	Prof Midiwo Prof Abiy

Mulwa, Lucky S. I56/72496/08	Investigation of <i>Psidia Punctualata</i> as Potential Analgesic Agents	Prof Yenesew Prof Midiwo
Mbewa, Tom Joseph I56/72154/08	Heavy Metal Analysis of Thermoplastic Paints in the Kenyan Market and the Environmental Implications of Application as road Marking Paints	Prof Kamau Dr F. Oduor Dr Kariuki
Ogange, Elphas O. I56/7445/08	The Role of Fertilizer Usage and Agrochemical Effluents on the Persistence of Algae Bloom on Kenyan Shores of Lake Victoria	Dr F. Oduor Dr Kariuki
Musakala, Justus I56/70923/09	Stabilization of Soil for Making the Road Sub-Grade Using Cement-Comparison of Different Cement Types	Dr Aluoch Prof Rading (Engineering)
Wanyama, George N. I56/72210/08	An Account of the Phyto-Bioconcentration of Copper in the Control of <i>Eichhornia Crassipes</i> (Water Hyacinth)	Prof Jumba Dr Oduor
Murimi, John Mbugua	An Alternative Metal/Electrolyte for Lead Acid Battery Making	Prof Kamau Dr Guto

9.2 Ongoing Postgraduate research projects (Ph.D)

NAME	TITLE	SUPERVISORS
Madadi O. Vincent	Studies of pesticide and macronutrient interaction dynamics in water-sediment/soil systems	Prof. Shem O. Wandiga Prof. Paul M. Shiundu

Godfrey A. Wafula	A Study of atmospheric fine particulate matter and their toxic components in Nairobi and its environs	Prof. Shem O. Wandiga Prof. Paul M. Shiundu
Nineza Claire	Modified electrodes in the study of selected pharmaceutical drugs	Prof. D. Orata Dr. A.O. Yusuf
		Prof. S.O. Wandiga Prof. I.O. Jumba
C.W. Mirikau		Prof. G.N. Kamau Prof. I.O. Jumba
Wabomba J. N	Kinetics of copper adsorption on a micaceous mineral of kenyan origin	Prof. P.M. Shiundu Dr. J. Onyari
Naziriwo Betty Bbosa	Interaction of trace metals with natural particles and their influence on phytoplankton production in waters of lake victoria	Prof. Shem O. Wandiga Prof. John P. M. L. Ssebuwufu
Mrs. Marina Mukabi		Prof. D. Orata Dr. A. Ochieng'
Ms. Joyce G. Njagi-Kithure	Distribution of diazinon and chlorpyrifos in selected aquatic matrices from the upper Tana River in Kenya	Prof. S.O. Wandiga Prof. I.O. Jumba
Mrs. Ruth Odhiambo	Synthesis of bionucleating macrocycles incorporating thiolato and polyether compounds fused to 1,10-phananthroline as sensors for soft heavy metal	Prof. S.O. Wandiga Dr. Austin Ochieng'
Mr. Francis Machumi	Phytochemical investigations of six Kenyan plants from families verbenaceae, asteraceae and	Prof J.O. Midiwo Prof Abiy Yenesew

10.0 LIST OF RESEARCH PUBLICATIONS

1. G. Bringmann, Joan Mutanya-Comar, Katija Maksimenka, J.M. Wanjohi, M. Heydenreich, Reto, Brun, Werner E. G. Muller, M.G. Peter, J.O. Midiwo, **A. Yenesew**. Joziknipholones A and B: The first dimmeric Phenylanthraquinones, from the roots of *Bulbine frutescence*. (2008) Chemistry, a European Journal, 14, 1420-1429.
2. Muiva, L.M. **Yenesew, A.**, Derese, S., Heydenreich, M., Peter, M.G., Akala, H.M., F. Eyase, Waters, N.C., Mutai, C., Keriko, J.M., Walsh, D. (2009). Antiplasmodial β -hydroxydihydrochalcone from seedpods of *Tephrosia elata*. Phytochemistry Letters 2, 99-102.
3. **Yenesew, A.**, Twinomuhwezi, H., Kiremire, B.T., Mbugua, M.N., Gitu, P.M., Heydenreich M., Peter M.G. (2009). 8-Methoxyneorautenol and Radical Scavenging flavonoids from *Erythrina abyssinica*. Bull. Chem. Soc. Ethiopia 23, 205-210.
4. **Yenesew, A.**, Twinomuhwezi, H., Kabaruu, J.M., Kiremire, B.T., Akala, H.M., Heydenreich M., Peter M.G., F. Eyase, Waters, N.C., Walsh, D. Antiplasmodial and larvicidal activities of flavonoids of *Derris trifoliata*. Bull. Chem. Soc. Ethiopia 23, 409-414.
5. Volodymyr Samoylenko, Melissa R. Jacob, Shabana I. Khan, Jianping Zhao, Babu L. Tekwani, Jacob O Midiwo, Larry A. Walker and Ilias Muhammad (2009) Anti-microbial, Antiparasitic, and Cytotoxic Spermene Alkaloids from *Albizia schimperiana*. Natural Products Communications. 4 (6) 791-796.
6. Onyari J M, Mulaa F, Muia J and Shiundu P (2008), Biodegradability of PLA, Preparation and Properties of PLA/Gum Blends, Journal of Polymers and the Environment **16**, 205-212
7. Wandiga S. O. and V.O. Madadi (2009) Water quality issues in East Africa. In Handbook of water purity and Quality. 1st Ed. Satinder Ahuja. Academic Press Elsevier. Int. ISBN. 978- 01-12-374192-9. Pg. 39-65.
8. Enos W. Wambu, Gerald K. Muthakia, **Paul M. Shiundu** and Joseph K. wa-Thiong'o, "Kinetics of Copper Desorption from Regenerated Spent Bleaching Earth"; *American-Eurasian Journal of Scientific Research*, **4(4)**, 317-323, (2009).
9. Enos W. Wambu, Gerald K. Muthakia, Joseph K. wa-Thiong'o and **Paul M. Shiundu**, "Regeneration of Spent Bleaching Earth and its Adsorption of Copper (II) ions from Aqueous Solutions"; *Applied Clay Science*, **46**, 176-180, (2009).
10. John M. Onyari, Francis Mulaa, Joshua Muia, **Paul M. Shiundu**, "Biodegradability of Poly (lactic acid), Preparation and Characterization of PLA/Gum Arabic Blends"; *Journal of Polymers and the Environment*, **16 (3)**, 205 – 212 (2008).

11.0 WORKSHOPS AND CONFERENCES ATTENDED

1. Yusuf A.O. and Kitoma Francis " Synthesis of biodiesel from Nile perch oil and methanol"-Presented at the AGM of The Kenya Chemical Society (Nairobi Chapter), held at Kenyatta University on 30th August, **2008**.

2. Yusuf A.O., Bhatt B.M. and Gitu P.M. “ Use of 1-tetralinyl group as asparagines carboxamide protecting and its use in the solid-phase peptide synthesis of oxytocin- Presented at the Workshop and Seminar of The Kenya Chemical Society (Nairobi Chapter), held at School of Physical Sciences, University of Nairobi on 25th April, **2009**.
3. Abiy Yenesew. Bioactive Isoflavonoids from Kenyan *Erythrina* species. 1st Joint IOCD-ISDNP International Symposium on Natural Products, 25-29 February, 2008, Kasane, Botswana.
4. Abiy Yenesew. Phenylanthraquinones: linking Africans to German universities. 17th November, 2008. Department of Chemistry, University of Wurzburg, Germany Seminar,
5. Midiwo J.O., Abiy Y., Solomon D. The search for anti-malarial principles from Keyan plants. The first joint IOCD-ISDNP International Symposium on Natural Products. Mowana Safari Lodge, Kasane, Botswana, Feb 25-29 2008.
6. 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.
7. Samuel K. Mwilu, **Austin O. Aluoch**, Seth Miller, Paula Wong & Omowunmi A. Sadik*, (2009) Identification and Quantitation of *Bacillus globigii* using Metal Enhanced Electrochemical Detection and Capillary Biosensor, *Analytical Chemistry*, *Accepted manuscript* [ID: ac-2009-00834e.R1](2009)
8. Omowunmi A. Sadik, Samuel K. Mwilu, **Austin O. Aluoch** (available online 19 March 2009) Smart electrochemical biosensors: from advanced materials to ultrasensitive devices. *Electrochimica Acta*, In Press, Accepted Manuscript
9. Omowunmi A. Sadik, **Austin O Aluoch**, Ailing Zhou; Status of biomolecular recognition using electrochemical techniques. *Biosensors and Bioelectronics*, In Press, Corrected Proof (Available online 21 October 2008)
10. Vincent Madadi. Pan Africa Chemistry Network Inaugural Conference on Biodiversity. University of Nairobi, Chiromo Campus 10th –12th September 2008.
11. Vincent Madadi. Workshop to develop National Action Plan on Sound Management of Pesticides in Kenya, 2nd -6th February 2009, Garden Hotel, Machakos.
12. Vincent Madadi. Global coordination workshop for the implementation of the Global monitoring plans on Persistent Organic pollutants. Workshop to draft the Global monitoring report for the first effectiveness evaluation of POPs.
13. Vincent Madadi. Chemical Information Exchange Network (CIEN) training workshop to 1) introduce the CIEN project and its linkage with the POPRC and other GMP related work, 2) discuss country priorities and needs for information exchange, 3) introduce project activities in collecting and gathering national data for the sound management of chemicals and 4) agree on road map for the project implementation. 15th –23rd October 2008, Nairobi, Kenya.
14. Vincent Madadi. Satellite workshop, “the Relevance of Chemistry in a Global Society”, 11-12 August 2008. Trained on the application of micro scale experiments in advancing the teaching of chemistry.
15. **Vincent Madadi**. Regional organization group workshop for drafting the Africa POPs Monitoring report for Africa Region for consideration at the 4th COP in May 2009.
16. S. O. Wandiga. Water, Water Everywhere and not a Drop to Drink. Paper presented at the Pan Africa Chemistry Network (PACN) Biodiversity Conference, University of Nairobi, 10-13th September, 2008. Kenya

17. Shem O. Wandiga. Promoting merit based academy in Ethiopia. Keynote Address at the National Conference on the Establishment of Ethiopian Academy of Sciences, United Nations Conference Center (ECA), February 13, 2009
18. Shem O Wandiga. Rivers in jeopardy and the need for river restoration. Plenary Lecture at the International Sustainable water Conference, July 25-28, 2009 held at University of Nairobi, Kenya.

12.0 RESEARCH THESIS TITLES

12.0.1 Ph.D. Thesis Titles

NAME	TITLE
Joseph Kipkosgei Lelon	Effect of micronutrients uptake by <i>acacia senegal</i> varieties on gum arabic quality under arid and semi-arid conditions
Salome Guchu	Studies on <i>desmodium</i> species for the allelochemicals involved in <i>striga</i> suppression
Muigai Peter Gitita	Extent of eutrophication of nairobi dam, kenya, and possible implications of the surrounding environment
Leonidah Kerubo Omosa	Chemical investigation of <i>dodonaea angustifolia</i> and <i>senecio roseiflorulus</i> for their bioactive principles
D.A Abong'o	Risk Assessment of Pesticide Residue Levels in Drainage to Lake Victoria: A case Study of River Nyando Drainage Basin of Winam Gulf in Kenya.

12.0.2 M.Sc Thesis Titles

John Ndathe	A study of the uptake of selected heavy metal ions and trichloro ethylene (tce) by sweet potato varieties in kenya
Immaculate Achieng	Phytochemical investigation of <i>kniphofia thomsonii</i> for antiprotozoal compounds
Mwiluka J. Tenge	
Evans Omotto	
Mugambi T. Muthaura	Removal of textile dyes from aqueous solutions using luffa cylindrical of Kenyan origin: Kinetic and equilibrium sorption studies

16. OUTREACH AND COMMUNITY SERVICE ACTIVITIES

1. Prof. G.N. Kamau: External examiner JKUAT
2. Prof. J.O. Midiwo: NAPRECA executive secretar;, External examiner, Maseno
3. Prof. J.O. Midiwo:
4. Prof. P.M. Shiundu: External examiner University of KwaZulu Natal , Kenyatta University, JKUAT, University of Pretoria
5. Prof. Abiy Yenesew: External examiner University of KwaZulu Natal , Kenyatta University, Maseno University, University of Botswana, University of Dar-es-Salaam; Journal of Bulletin of Chemical Society of Ethiopia Referee
6. Dr. D.K. Kariuki: KEBS Water Quality committee; NEMA Hazardous and Toxic Materials committee; WRMA Threshold Pollution in Waste Water Committee.
7. Dr. B.M. Wamalwa: Board member of Japan Government scholarships; External examiner KEMRI;
8. Prof. Wandiga S.O.: Chairman Bondo University Council; Kenyatta University Senate member; Nairobi River Basin Project coordinator; Pan African Chemistry Network Chairman; UNEP/GEF-UoN Project coordinator
9. Dr. A.O. Yusuf: External examiner JKUAT, Egerton University, Kenyatta University; Mt. Sinai C.M.I. School PTA executive committee member; IDB Selection Committee Board Member.
10. Dr. Solomon Derese: Climbed Mt. Kenya with UoN Rovers Club
11. Prof. D. Orata: External examiner Maseno University, JKUAT

17. NEWLY ESTABLISHED LINKAGES

The Department has links with the following institutions:

1. Green Africa Foundation in Biodiesel research
2. UNEP Chemicals and University of Nairobi (Chemistry) Project in monitoring of POPs in Eastern and Southern and Southern African Region
3. Nairobi River Basin Project for small scale funding agreement
4. Accreditation to carry out studies on physical chemical properties of pest control products for registration purposes
5. Africa Knowledge Transfer Partnership (AKTP)- British Council
6. **New one are as follows:**

18. RESEARCH EQUIPMENT PURCHASED

The Department purchased the following pieces of equipment:

1. Water Testing meter-Turbidity, colour and chlorine
2. pH/Conductivity meter
3. Dissolved Oxygen meter

19. STAFF IN DEPARTMENT OF CHEMISTRY

NAME	DESIGNATION
Prof. S.O. Wandiga	Professor
Prof R. Munavu	Professor
Prof I.O. Jumba	Professor
Prof G. Kamau	Professor
Prof. J.O. Midiwo	Professor
Prof. James Dix	Professor
Prof. P.M. Gitu	Professor
Prof. Duke O. Orata	Associate Professor
Prof D.N. Kariuki	Associate Professor
Prof Abiy Yenesew	Associate Professor

Prof B. Bhatt	Associate Professor
Prof Lydiah .W. Njenga	Associate Professor
Prof M. Shiundu	Associate Professor
Dr. J.P. Kithinji	Snr Lecturer
Dr. Helen N. Njenga	Snr Lecturer
Dr. J.M. Onyari	Snr Lecturer
Dr. A.O. Yusuf	Snr Lecturer
Dr. E. Kituyi	Snr Lecturer
Dr. W.A. odinga	Snr Lecturer
Dr. D.K. Kariuki	Snr Lecturer
Dr. J.M. Mwaniki	Snr Lecturer
Mr. C. Mirikau	Lecturer
Dr.F.O. Oduor	Lecturer
Dr. Patricia Gitari	Lecturer
Dr.M.N. Mbugua	Lecturer
Dr. Austin Aluoch	Lecturer
Mr. J.M. Makopa	Lecturer
Mr. Godfrey A. Wafula	Lecturer
Dr. B.M. Wamalwa	Lecturer
I.N. Michira	Lecturer
Dr. P. Guto	Lecturer
Dr. J.M. Wanjohi	Lecturer
Dr. L. Kerubo	Lecturer
Dr. D.W. Mbui	Lecturer
Dr. S. Derese	Lecturer
Dr. J. Ndakala	Lecturer
Mr. Njagi Njomo	Tutorial Fellow
Ms. Beth Ndunda	Tutorial Fellow
Mr. J.N. Wabomba	Tutorial Fellow
Mr. Erick Korir	Tutorial Fellow
Ms. Immaculate Achieng'	Tutorial Fellow
Mr. Vincent O. Madadi	Tutorial Fellow

Mrs. Marina Mukabi	Assistant Lecturer
Mr. J. M. Ng'ang'a	Principal Technologist
Ms. A. Muia	Chief Technologist
Mr. J.S. Amani	Snr. Technologist
Mr. G.K. Katiku	Snr. Technologist
Mr. Peter K. Njoroge	Snr. Technologist
Mr. Frank Waiharo	Snr. Technologist
Ms. R. Mutungi	Snr. Technologist
Ms. F. Wainaina	Snr. Technologist
Mr. E. Kimega	Snr. Technologist
Ms. V. Muinde	Snr. Technologist
Mr. E. Mwangi	Snr. Technologist
Mr. G. K. Kaptich	Technologist
Ms. E.N. Kamau	Technologist
Ms. M. Nyuthe	Technologist
A. O. Mitema	Technologist
Mr. E.F. Odanga	Technologist
Ms. A.W. Ndekei	Technologist
Mr. W. Orangi	Technologist
Ms. M. Checha	Technologist
Mr. P. Lekimain	Technologist
Mr. E. Terer	Trainee Technologist
Mr. S. Shilamala	Documentalist
Mr. F.K. Ndule	Lab Attendant
Ms. Nginyo Catherine	Lab Attendant
Mrs. Jane N. Gachungi	Secretary
Mrs. Elizabeth Juma	Secretary
Mrs B.U.S. Akundabweni	Snr Admin. Ass.
Mr. Benard Kiplangat Rop	Technologist

