

# LOICE M. OJWANG'

P.O. Box 195-80100

Kilifi Kenya

Cell phone: 254 717 832355

Email: loiceojwang@yahoo.com

## Highlights

Strong background in Analytical Chemistry and Environmental Chemistry

## Education

**2012:** Ph.D., Chemistry, Louisiana State University, Baton Rouge, LA.

Thesis title: "Investigations into the role of humic acid in biomembrane permeability and the effects of naturally formed gold and silver nanoparticles on these interactions"

**2005:** B.Sc., Chemistry (with Honors) Moi University, Kenya. Thesis title: "Analysis of paper mill effluents released into River Nzoia"

## Work Experience

**2013- Present:** Lecturer at Pwani University, Kilifi, Kenya

Responsible for teaching the undergraduates and the postgraduates chemistry lecture

**2012-2013:** Lecturer, Louisiana State University (Baton Rouge)

Responsible for teaching the general chemistry lecture and laboratory classes

**2006 - 2012:** Graduate Research Assistant, Department of chemistry, Louisiana State University, Baton Rouge, LA

## Tasks Performed:

- Prepared unilamellar model biomembranes encapsulated with a fluorescent probe dye
- Investigated model biomembranes interactions with humic acid using fluorescence spectroscopy
- Synthesized cadmium sulfide (CdS) nanocrystals and characterized them using UV-Vis spectroscopy and TEM, and Dynamic Light Scattering
- Synthesized gold and silver nanoparticles using humic acid as both a reducing and a stabilizing agent and characterized the nanoparticles using UV-Vis, TEM, and Dynamic Light Scattering
- Chemically modified humic acid and characterized them using  $^{13}\text{C}$  NMR and Total Organic Carbon analysis
- Separated oil from sea water using Solid Phase Extraction and characterized it using Gas Chromatography-Mass Spectrometry, fluorescence spectroscopy, UV-Vis spectroscopy and Total Organic Carbon analysis

**2006 – 2012:** Graduate Teaching Assistant Department of chemistry, Louisiana State University, Baton Rouge, LA

- Responsibilities included teaching general chemistry laboratories

### Supervision of Postgraduate Students

#### Ph.D

- |                                                                                                                                                           | <b>Status</b>   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| 1. <b>Charles Mitto Kosore</b> (2016/2019) “Land-Based Anthropogenic inputs and their Influence on Heavy Metal Pollution along the Kenyan Coastline” (PU) | <b>Proposal</b> |

#### MSc students

- |                                                                                                                                                                                                               |                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 1. <b>Edwin Nyambu Mwashinga:</b> (2013/2016 ) “Determination of Selected Heavy Metals in River Mukurumudzi to Establish Potential Contamination from Land Based Activities and Sources” (PU)                 | <b>Defended</b>      |
| 2. <b>Claris Amani Kombe:</b> (2013/2016 ) “An Evaluation of the Influence of Nutrients Levels in Marine Water and Sediment on the Distribution of Seagrass Meadows in Malindi Marine Park and Reserve.” (PU) | <b>Thesis Intent</b> |
| 3. <b>Jared Omwenga Ogeisia :</b> (2013/2016 ) “Enhanced Removal of Residual Oil and Microbes from Petroleum Refineries Industry Effluent using Chitosan Coated Silver Nanoparticles” (PU)                    | <b>Data Analysis</b> |
| 4. <b>Martin Osemba:</b> (2013/2016 ) “Anodic Oxidation of Azo Dyes Using Boron Doped Diamond (BDD) Electrodes and Silver Nanoparticles (PU)                                                                  | <b>Data Analysis</b> |
| 5. <b>Michira Justin Atinda</b> (2015/2018 ) “Determination of Fluoride Removal Efficiency and Antimicrobial Activity of <i>Maerua Subcordata</i> Root Extracts” (PU)                                         | <b>Lab Work</b>      |

### University Assignments

1. Gender Champion Pwani University: 2017
2. Chairperson, Oceanography and Marine Sciences Committee: 2015
3. Member, Pwani University Procurement Committee: 2016
4. Member, Pwani University Strategic Plan Committee: 2014
5. Member, Pwani University ODEL learning Committee: 2014
6. Member, monitoring & Evaluation Sub-Committee PURB: 2016
7. Department of Chemistry Curriculum Coordinator: 2015- 2016
8. Department of Chemistry Examination Coordinator: 2016 - present
9. Coordinator of Collaboration between Pwani University and Florida State University 2015 - present

## Workshops/Trainings

- 1) Gender mainstreaming workshop organized by Libra Management Consultants, in Naivasha, December, 2016
- 2) Gender workshop at Pwani University, April , 2016
- 3) Molecular and atomic spectroscopy workshop March 2016 Boma Hotel Nairobi
- 4) Research for Impact workshop by WIOMSA October 2015 at the Flamingo Beach in Shanzu
- 5) Blended learning workshop Pwani University, January, 2014

## Research and Collaboration Grants

- Team Member on PURB 500,000 KSh funded project entitled **Anodic Oxidation of Azo Dyes Using Boron Doped Diamond (BDD) Electrodes and Silver Nanoparticles** at Pwani University. (2014)
- Team Member on NACOSTI funded project entitled 167,000 KSh funded project entitled **Enhanced Removal of Residual Oil and Microbes from Petroleum Refineries Industry Effluent using Chitosan Coated Silver Nanoparticles** at Pwani University. (2014)
- Charles E Coates Research Scholar award \$ 1500. (2010)

## Publications in Refereed Journals

1. Mariam M. Swaleh, Renison Ruwa , Moses N. Wainaina, **Loice M. Ojwang'** , Samuel L. Shikuku and Justin K. Maghanga “Heavy Metals Bioaccumulation Assessment in *acanthopleura gemmata* from Fort Jesus Mombasa” *Journal of Environmental Science, Toxicology and Food Technology* , **2016**, 10, 39-45.
2. Mariam M. Swaleh, Renison Ruwa , Moses N. Wainaina, **Loice M. Ojwang'** , Samuel L. Shikuku and Justin K. Maghanga “Heavy Metals Bioaccumulation in Edible Marine Bivalve Mollusks of Tudor Creek Mombasa Kenya” *Journal of Environmental Science, Toxicology and Food Technology* , **2016**, 10, 43-52.
3. **Loice M. Ojwang** and Robert L. Cook. “Environmental Conditions That Influence the Ability of Humic Acids to Induce Permeability in Model Biomembranes” 2013, *Environmental Science and Technology*, **2013**, 47, 8280-8287.
4. Thomas S. Bianchi, Robert L. Cook, E. Michael Perdue, Paulina E. Kolic, Nelson Green, Yaoling Zhang, Richard W. Smith, Alexander S. Kolker, Alex Ameen, Gary King, **Loice M. Ojwang**, Caroline Schneider, Anna Normand, and Robert Hetland. “Impacts of the Horizon Oil Spill and Diverted Freshwater on Dissolved Organic Matter and Microbial Communities in Barataria Bay, Louisiana, U.S.A.” *Marine Environmental Research*, **2011**, 72, 248-257.

## Book Chapter

1. Robert L. Cook, **Loice M. Ojwang**, Caroline L. Poché. “Nuclear Magnetic Resonance for Environmental Monitoring.” *Encyclopedia of Analytical Chemistry*. R.A. Meyers **2010**.

## Conference papers

1. Paulina E Kolic, Caroline Schneider, **Loice M. Ojwang**, Thomas S Bianchi, E Michael Perdue, Robert L Cook "Influence of oil contamination and measures to mediate oil incursion from the Deepwater Horizon spill on the dissolved organic matter of Barataria Bay American Chemical Society" **2013** American Chemical Society National Meeting New Orleans, Louisiana
2. Suresh C Regmi, Yohannes H Rezenom, **Loice M. Ojwang**, Atiya Jordan, Sergio de Rooy, Robert L Cook, Isiah M Warner, Indu Kheterpal, S Douglass Gilman "Particle analysis using capillary electrophoresis with laser-induced fluorescence and laser light scattering detection." **2013** American Chemical Society National Meeting New Orleans, Louisiana
3. **Loice M Ojwang**, Robert L Cook "Spectroscopic Study of the Mechanisms of Interaction of Chemically Diverse Humic Substances with Biomembranes," American Chemical Society (ACS) National Meeting Anaheim, CA **2011**
4. Paulina E Kolic, Robert L Cook, Thomas S Bianchi, E Michael Perdue, **Loice M Ojwang**, Caroline L Schneider, Anna E Normand, Nelson W Green, Yaoling Zhang, Richard Smith, Alexander S Kolker, Alex D Ameen "Monitoring the Effects of Oil Contamination on Dissolved Organic Matter using Fluorescence and UV-Vis Spectroscopy," American Chemical Society (ACS) National Meeting Denver, CO, **2011**
5. **Loice M Ojwang**, Robert L Cook "Investigations of the Mechanism of Interaction between Humic Substances, Metal Salts, and Metal Nanoparticles with Biomembranes," American Chemical Society Fall National Meeting Denver, CO **2011**
6. **Loice M Ojwang**, Robert L Cook "Spectroscopic Study of the Kinetics and the Mechanism of the Interaction of Humic Substances with Biomembranes," American Chemical Society (ACS) National Meeting Boston, MA **2010**
7. **Loice M Ojwang** and Kituyi J. Lusweti, "Analysis of Environmental Impacts of Effluents Released into River Nzoia. Fifth International Conference on Chemistry and its Contribution to a Healthy Environment and Socio-economic Development, Kenyatta University, August **2005**, Kenya.

## Technical Skills

Absorption Spectroscopy, Fluorescence Spectroscopy, Transmission Electron Microscopy, Cryo-TEM, Dynamic Light Scattering, TOC analysis, FTIR, NMR Spectroscopy, UV-Vis, GC/MS and Computer skills.

## Computer Skills

Proficiency in Excel, MS Origin, Excel, MS Word, MS Power point, Chem Office Acquainted with chemistry structural database and literature search software. Able to learn new software quickly.

## Professional Activities and Affiliations

1. Member, American Chemical Society, 2008-present
2. Member, National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE), 2008-present
3. Western Indian Ocean Marine Science Association (WIOMSA) 2015 – present
4. Kenya Chemical Society 2015 – present

## **Referees**

Prof. Paul Guyo  
Dean School of Pure and Applied Sciences  
p.guyo@pu.ac.ke  
0711849049

Dr. Samuel Shikuku Libendi  
Chair department of Chemistry  
[s.shikuku@pu.ac.ke](mailto:s.shikuku@pu.ac.ke)  
0732902270

Dr. Robert Cook,  
Associate professor  
rlcook@lsu.edu  
225-578-2980

Dr. Isiah Warner,  
Boyd professor  
iwarner@lsu.edu  
225-578-2829