

## CURRICULUM VITAE - PRISCILLA BAKER

Full Professor  
Department of Chemistry,  
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### AWARDS AND RECOGNITION

- 2006 - :** **Chairperson:** Electrochemistry division of South African Chemical Institute (SACI, 2006-current)
- 2008:** **Conference chairperson:** 1<sup>st</sup> International symposium on Electrochemistry, 8-11 July 2008, Bellville South Africa
- 2008** Guest Editor, *Electrochimica Acta* (Elsevier) 55 (14); 30 May 2010
- 2009:** Keynote lecture, SMCBS'2009, Poland 6-10 November 2010
- 2009:** **Conference Chairperson:** 10<sup>th</sup> International symposium on Kinetics in Analytical Chemistry; 2-4 December 2009.
- 2010:** Keynote lecture, *Analitika* 2010, 4-9 December 2010, Stellenbosch
- 2011:** Guest Editor, *Analytical Letters*, Volume 44 (11), June 2011
- 2013:** **Deputy chair, division 1** (Analytical Electrochemistry) International Society for Electrochemistry (2013-2016)
- 2014:** **Visiting professor**, University Cergy Pontoise (Paris, France) 2013-2016.  
**Member of the international organizing committee:** 14th Topical Meeting of the International Society of Electrochemistry (Electrochemistry for Life Science and Bioanalysis), 29 March to 1 April, 2014, Nanjing, China.
- 2014:** **Winner:** Department of Science and Technology, **Distinguished Women Scientist award**, Physical and Engineering Sciences.  
<http://mg.co.za/article/2014-08-18-distinguished-women-researchers>
- 2014:** University of the Western Cape, **DVC Young Researcher award**.
- 2015:** **Council Member**, University of the Western Cape (2015-)
- 2015:** **Chairperson:** 3rd International Symposium on Electrochemistry, 26-28 May 2015, Bellville, South Africa
- 2015:** **Member:** Academy of Science of South Africa (Assaf)
- 2015:** **Conference chair:** 3<sup>rd</sup> International symposium on Electrochemistry (MAPET'2015), Electrochemistry division of SACI; 26-28 May 2015, Bellville South Africa.
- 2016:** **Regional representative for Africa** (International Society of Electrochemistry, 2016-)

## LEADERSHIP POSITIONS

**Co-leader:** Sensor research laboratory, Chemistry department, UWC, 2004

**Chairperson:** Electrochemical division of SACI (ElectrochemSA), 2007-

**Deputy Chairperson:** Electroanalytical Chemistry (Division 1) International Society for Electrochemistry (2013-)

**Deputy HOD:** Chemistry department (2011-)

**Regional representative for Africa:** International Society of Electrochemistry (2016-)

## EDUCATIONAL QUALIFICATIONS

**Bachelor of Science** (1990, University of Cape Town)

**National Diploma in Analytical** (1993, Cape Peninsula University of Technology)

**BSc Honours** (Chemistry) (1995, UWC)

**MSc Chemistry:** “The evaluation of trace metals in the atmosphere” (1997, University of the Western Cape)

**Ph.D Chemistry:** “Synthesis and Characterisation of novel metal tin oxide composites as anodes for phenol degradation” (2004, University of Stellenbosch)

## PROFESSIONAL ACTIVITIES:

**Journal Reviewer:** Analytica Chimica Acta ; Journal of Applied polymer Science  
Biosensors Bioelectronics; Talanta; Electrochimica Acta and others

**Guest editor:** (i) Electrochimica Acta special issue “Sensors and Sensor Technology”; Electrochimica Acta 55 (14), 30 May 2010  
(ii) Analytical Letters, Volume 44 (11) June 2011

## COLLABORATIONS

**ESNAM (European network)** 2012-2013 Artificial muscles and actuators

*Partners:* 15+ European, African and UK partners

**Marie Curie FP7 Mobility programme:** 2013-2018; Cancernanosens

*Partners:* 13 European and African countries

**NSF Materials world network research cooperation programme** (2010-2013)

*Partners:* Prof PGL Baker (University of the Western Cape, RSA) and Prof O Sadik (State University of New York, Binghamton, USA);

**South Africa – Germany Key International Scientific Cooperation** (2011-2013)

*Partners:* Prof PGL Baker (University of the Western Cape, RSA) and Prof C Wittmann (Neubrandenburg University, Neubrandenburg, Germany);

Water Research Commission (2009-2015)

**University Cergy Pontoise:** French Embassy bursary programme, DST/ COST researcher exchange (2013-2015).

## SUPERVISION

### Post-Graduate training

#### *PhD completed:*

Richard Akinyeye (2007), Immaculate Michira (2007), Vernon Somerset (2007), Michael Klink (2007), Joseph Owino (2010), Everlyne Songa (2010), Zelo Mangombo (2010), Jasmina Martinovic (2010), Omotayo Arotiba (2010), Fanelwa Rachel Ngece (2011), Munkombwe Muchindu (2011), Heidi Richards (2012), Rasaan Olowu (2012), Peter Ndagili (2012), Kanyisa Nohako (2013), Euodia Hess (2013), Milua Masikini (2013), Stephn Mailu (2013), Oluwakemi Tovide (2014), Nolubabalo Matinise (2014), Christopher E Sunday (2014), Mawethu Bilibana (2014), Gcineka Mbambisa (2015), Xolile G Fuku (2015).

#### *Post-doctoral fellows:*

Dr Amir Al Ahmid (2006-2007), Dr Raju Khan (2008), Dr Anna Ignaszak (2008), Dr Tesfaye Waryo, Dr Faiza Iftikhar (2009-2010), Dr Abd Baleg (2014), Dr Milua Masikhini (2015-2016). Dr Christopher Sunday (2015-2016),

#### *Visiting researchers:*

Lucian Zamfir: University of Bucharest September –November 2014  
Molla Tefera: University of Addis Ababa, August- November 2015  
Abdellatif Ait Lahcen, University of Hassan II-Casablanca, September- November 2015  
Romain Petit (MSc), University Cergy Pontoise, April-August 2016  
Jonathan Chrun (MSc), University Cergy Pontoise, April-August 2016

#### *Co-ordinator of BSc Chemistry Honours programme*

Enrollment 2014: 11 full time students  
Enrollment 2015: 22 full time students  
Enrollment 2016: 29 full time students

#### *Visiting professor:*

University of Bangor (Wales, UK) – 2003 and 2005 (2 weeks each)  
Coimbra University (Portugal) – 2004 (4 weeks)  
State University of New York, Binghamton (USA) – 2012  
University of Cergy Pontoise (France) – 2013, 2014, 2015 and 2016 (2 weeks each)

## *RESEARCH PROFILE*

Professor Priscilla Baker is co-leader of SensorLab, an electrochemistry research group in the department that focuses on the fundamental and applied electrodynamics of materials and sensors. Her specialisation is in the application of frequency modulated electrochemical techniques, notably electrochemical impedance spectroscopy – a technology that characterises organic and inorganic materials according to their equilibrium electrical properties – to the design and evaluation of electrochemical smart materials. These materials include hydrogels produced from polysulfone (a group of plastics that are moldable at certain temperatures), a product that can be applied in organic fuel cells and as membrane materials for water treatment. Researchers under her supervision have developed novel polyamic acid composites – usually thin film with thermal and mechanical properties – that have been applied in the design of immunosensors that can detect the presence of mycotoxins (toxic chemicals produced by fungi) in fish species and water analysis. Baker's more recent research includes the design and evaluation of novel electroactive actuator systems (materials that change in size or shape when stimulated by an electric field) for atmospheric monitoring. Baker collaborates with researchers in US, Germany and France, partnerships that lead to numerous student exchange opportunities. She is also an active member of two research consortia funded by the Seventh Framework Programme (or FP7) of the European Commission, specifically the European Scientific Network for Artificial Muscles (ESNAM) and the Marie Curie International Research Staff Exchange Scheme (IRSES). She has participated in international teaching and training programmes at University of Bangor (Wales, UK), Coimbra University (Portugal) and University of Cergy Pontoise (France). Baker has supervised 50+ Honours, MSc, and doctoral researchers as well as post-doctoral fellows. Students who have graduated under her supervision currently hold leadership positions at South African Police Services (Forensics), CSIR, Mintek, City of Cape Town and academic and advisory positions at academic and government institutions throughout Africa. Baker was announced Winner of the Department of Science and Technology, **Distinguished Woman Scientist** award in the category Physical and Engineering Sciences (2014) and in the same year she was awarded the **Deputy Vice Chancellor's Young researcher Award**, by the University of the Western Cape. Her research profile has been featured by leading South Africa news network publications such as **Mail & Guardian**, the woman's magazine "**KUIER**" as well as the international online publication Laboratory Marketing Spectrum, **LMS**.

## PUBLICATIONS IN PEER REVIEWED JOURNALS:

1. Y von Schirnding , A Matthee, P Robertson\*, N Strauss, M Kibel . Distribution of blood lead levels in schoolchildren in selected Cape Peninsula suburbs, subsequent to reduction in petrol lead; **South African Medical Journal**, Volume 91(10), October 2001.
2. Y von Schirnding , N Strauss , A Matthee, P Robertson\*, P Blignaut Sunscreen use and environmental awareness among beach goers in Cape Town, South Africa. **Public Health Reviews**, Volume 19 (1-4), 1991-1992, 2019-217.
3. PG Baker, EG Brunke, F Slemr, AM Crouch. Atmospheric mercury measurements at Cape Point, South Africa: **Atmospheric Environment** ,(36), 2002, p2549-2465.
4. PGL Baker, AM Crouch , R S Sanderson, W.J. Przybylowicz, C.C. Theron. Characterisation of mixed metal tin oxide thin films for application as electrocatalysts. **National Accelerator Centre, Annual Report**, March 2001.
5. Removal of Organic components and bacteria from Water by Electrochemical Combustion. Cronje M, Baker PGL, Knoetze J H, Sanderson R D, Crouch A M. **WRC report no. 1196/1/05, p125**.
6. Chemical synthesis and morphology of  $\beta$  naphthalene sulfonic acid-doped polypyrrole micro/nanotubes. Richard Akinyeye, Mantoa Sekota, Priscilla GL Baker and Emmanuel Iwuoha. **Fullerenes, Nanotubes and Carbon Nanostructures** Volume 14 (1) (2006).
7. Polyaniline-mercaptobenzothiazole biosensor for organophosphate and carbamate pesticides. V.S. Somerset, M.J. Klink, M.M.C. Sekota, P.G.L. Baker and E.I. Iwuoha. **Analytical Letters**, 39: (1683-1698), 2006.
8. Electrochemical Interrogation and Sensor applications of Nanostructured Polypyrroles. Richard Akinyeye, Immaculate Michira, Mantoa Sekota, Amir Al-Ahmed, Priscilla Baker and Emmanuel Iwuoha **Electroanalysis** 18(24) 2006, 2441 – 2450.
9. Electrochemical and Spectroscopic Properties of Fly Ash-Polyaniline Matrix Nanorod Composites. S.E. Mavundla, V.S. Somerset, L.F. Petrik, M.J. Klink, P. Baker and E. Iwuoha. **Microchim Acta** 155, 453–458 (2006)
10. Electrochemical synthesis and characterization of 1,2-Naphthaquinone-4-sulfonic acid doped polypyrrole. RO Akinyeye, I Michira, M Sekota, A Al Ahmed, R Khan, PGL Baker, D Tito, CMA Brett, M Kalaji and E Iwuoha. **Electroanalysis** 19(2-3) 2007, 303-309.
11. Acetylcholinesterase-polyaniline biosensor investigation of organophosphate pesticides in selected organic solvents. Vernon S. Somerset, Michael J Klink, Priscilla G. L. Baker and Emmanuel I. Iwuoha. **Journal of Environmental Science and Health Part B** (2007) 42, 297–304.

12. PGL Baker, RD Sanderson, AM Crouch. Preparation and characterization of mixed metal tin oxide thin film electrodes. *Thin Solid Films* 515 (2007) 6691–6697.
13. Emmanuel Iwuoha, Rachel Ngece, Michael Klink and Priscilla Baker. Amperometric responses of CYP2D6 drug metabolism nanobiosensor for sertraline - a selective serotonin reuptake inhibitor. *IET Nanobiotechnology*, 1 (4), 2007, p62-67.
14. Joseph H. O. Owino, Anna Ignaszak, A. Al-Ahmed, Priscilla G.L. Baker, Hailemichael Alemu, Jane Catherine Ngila, Emmanuel I. Iwuoha. Modeling of the impedimetric responses of aflatoxin B1 immunosensor prepared on electro-synthetic polyaniline platform. *Analytical and Bioanalytical Chemistry* 388 (2007) 1069-1074.
15. V. Somerset, M. Klink, R. Akinyeye, I. Michira, M. Sekota, A. Al-Ahmed, P. Baker, E. Iwuoha. Spectroelectrochemical Reactivities of Novel Polyaniline Nanotube Pesticide Biosensors. *Macromol. Symp.* 2007, 255, 36–49.
16. I Michira, R. Akinyeye, V. Somerset, M. J. Klink, M. Sekota, A. Al-Ahmed, P. G. L. Baker, E. Iwuoha. Synthesis, Characterisation of Novel Polyaniline Nanomaterials and Application in Amperometric Biosensors. *Macromol. Symposia* (2007) 255: 57–69.
17. Omotayo A. Arotiba, Anna Ignaszak, Rehana Malgas, Amir Al-Ahmed, Priscilla G.L. Baker, Selwyn F. Mapolie and Emmanuel I. Iwuoha. An electrochemical DNA biosensor developed on novel multinuclear nickel(II) salicylaldimine metallodendrimer platform. *Electrochimica Acta*, 53 (4), 2007, 1689-1696.
18. Jasmina Martinovic, Ana-Maria Chiorcea-Paquim, Victor Constantin Diculescu, Juanita Van Wyk, Emmanuel Iwuoha, Priscilla Baker, Selwyn Mapolie, and Ana-Maria Oliveira-Brett. Metallo-functionalized first-generation salicylaldimine poly(propyleneimine) tetraamine dendrimers: electrochemical study and atomic force microscopy imaging. *Electrochimica Acta* 53, 4907-4919, 2008.
19. Joseph HO Owino, Omotayo A Arotiba, Priscilla GL Baker, Anthony Guiseppi-Elie, Emmanuel I Iwuoha. Synthesis and characterization of poly (2-hydroxyethyl methacrylate)-polyaniline based hydrogel composites. *Reactive and Functional Polymers*; 68 (2008) 1239-1244.
20. Omotayo Arotiba, Joseph Owino, Nicollette Hendricks, Tesfaye Waryo, Nazeem Jahed, Priscilla Baker, Emmanuel I. Iwuoha. An electrochemical DNA biosensor developed on a nanocomposite platform of gold and poly(propylene imine) dendrimer. *Sensors* 2008, 8, 6791-6809;
21. Nicolette R Hendricks, Tesfaye T Waryo, Omotayo A Arotiba, Nazeem Jahed, Priscilla G Baker, Emmanuel Iheanyichukwu Iwuoha. Microsomal cytochrome P450-3A4 (CYP3A4) nanobiosensor for the determination of 2,4-dichlorophenol - an endocrine disruptor compound. *Electrochimica Acta* 54, 2009, 1925-1931.

22. Joseph H.O. Owino, Omotayo A. Arotiba, Nicolette Hendricks, Everlyne A. Songa, Nazeem Jahed, Tesfaye T. Waryo, Rachel F. Ngece, Priscilla G .L. Baker and Emmanuel I. Iwuoha Electrochemical Immunosensor Based on Polythionine/Gold Nanoparticles for the Determination of Aflatoxin B1. *Sensors* **2008**, 8, 8262-8274.
23. Synthesis and Characterization of Novel Nanophase Hexagonal Poly(2,5-imethoxyaniline). Siphon E. Mavundla, Gerald F. Malgas, Priscilla Baker, Emmanuel I. Iwuoha. *Electroanalysis* 20 (21) **2008**, p2347 – 2353.
24. Everlyne A. Songa, Tesfaye Waryo, Nazeem Jahed, Priscilla G. L. Baker, Emmanuel I. Iwuoha. Electrochemical Nanobiosensor for Glyphosate Herbicide and Its Metabolite. *Electroanalysis*, 21(3-5) **2009**, p 671-674)
25. Amperometric nanobiosensor for quantitative determination of glyphosate and glufosinate residues in corn samples. Everlyne A. Songa, Vernon S. Somerset, Tesfaye Waryo, Priscilla G. L. Baker, and Emmanuel I. Iwuoha. *Pure Appl. Chem.*, Vol. 81, No. 1, pp. 123–139, **2009**.
26. Amperometric hydrogen peroxide sensors with multivalent metal oxide modified electrodes for biomedical analysis. T Waryo, Pkotzian, S Begic, P Bradizlova, N Beyene, P Baker, B Kgarebe, E Turkusic, E Iwuoha, K Vytras, K Kalcher. *ICBME 2008 Proceedings* **23** pp829-833, **2009**.
27. Polyester Sulphonic Acid Interstitial Nanocomposite Platform for Peroxide Biosensor. Amir Al-Ahmed , Peter M. Ndagili , Nazeem Jahed , Priscilla G. L. Baker and Emmanuel I. Iwuoha. *Sensors* **2009**, 9(12), 9965-9976;
28. Electroanalytical Determination of Catechin Flavonoid in Ethyl Acetate Extracts of Medicinal Plants. Manki S Maoela, Omotayo A. Arotiba\*, Priscilla G.L. Baker, Wilfred T Mabusela, Nazeem Jahed, Everlyne A. Songa, Emmanuel I. Iwuoha. *Int. J. Electrochem. Sci.*, 4 (2009) 1497 – 1510
29. Ferrocenium hexafluorophosphate-induced nanofibrillarity of polyaniline–polyvinyl sulfonate electropolymer and application in an amperometric enzyme biosensor. Peter M. Ndagili, Tesfaye T. Waryo, Munkombwe Muchindu, Priscilla G.L. Baker, Catherine J. Ngila, Emmanuel I. Iwuoha. *Electrochimica Acta*; 55(14) **2010**, p4267-4273.
30. Electrochemical impedimetry of electro-deposited poly(propylene imine) dendrimer monolayer, Omotayo Arotiba, PhD; Joseph Owino, PhD; Priscilla Baker, PhD; Emmanuel Iwuoha, PhD, *Journal of Electroanalytical Chemistry*. 638(2) **2010**, p287-292.
31. A Potential masking approach in the detection of dopamine on 3-mercaptopropionic acid capped ZnSe quantum dots modified gold electrode in the presence of interferences. Peter M Ndagili, Omotayo Arotiba, Priscilla G Baker, Emmanuel I Iwuoha. *Journal of Electroanalytical Chemistry* 643 (2010) 77-81.

32. Development of a tyrosinase biosensor on a novel Polyaniline-Polyvinyl Sulphonate Composite Film modified Boron-Doped Diamond (BDD) electrode. Zelo Mangombo, Priscilla Baker, Emmanuel Iwuoha, David Key. *Microchimica Acta* Vol 170 (3-4), 267-273, May **2010**.
33. Rasaan A. Olowu, Omotayo Arotiba, Stephen N. Mailu, Tesfaye T. Waryo, Priscilla Baker, Emmanuel Iwuoha. Electrochemical Aptasensor for Endocrine Disrupting 17 $\beta$ -Estradiol Based on a Poly(3,4-ethylenedioxythiophene)-Gold Nanocomposite Platform. *Sensors* 10 (**2010**) 9872-9890.
34. Stephen N. Mailu, Tesfaye Waryo, Peter M. Ndagili, Fanelwa R. Ngece, Abd A. Baleg, Priscilla G. Baker, Emmanuel I. Iwuoha, Determination of Anthracene on Ag-Au Alloy Nanoparticles/Overoxidized-Polypyrrole Composite Modified Glassy Carbon electrodes. *Sensors* 10 (**2010**) 9449-9465.
35. Jasmina Martinovic, Juanita Van Wyk, Selwyn Mapolie, Nazeem Jahed, Priscilla Baker, Emmanuel Iwuoha. Electrochemical and spectroscopic properties of dendritic cobalto-salicylaldehyde DNA biosensor. *Electrochimica Acta* 55 (**2010**) 4296-4302.
36. Michael Klink, Richard Akinyeye, Vernon Somerset, Mantoa Sekota, Priscilla Baker, Emmanuel Iwuoha. Electrochemical and spectroscopic dynamics of nanostructured polynuclear sulphonic acid-doped poly(2, 5-dimethoxyaniline). In A. Al-Ahmed (Ed). Current Application of Polymer and Nano Materials. *Materials Science Forum* 657 (**2010**) 231-248.
37. Munkombwe Muchindu, Tesfaye Waryo, Omotayo Arotiba, Ewa Kazimierska, Aoife Morrin, Anthony J. Killard, Malcolm R. Smyth, Nazeem Jahed, Boitumelo Kgarebe, Priscilla G.L. Baker, Emmanuel I. Iwuoha. Electrochemical nitrite nanosensor developed with amine- and sulphate-functionalised polystyrene latex beads self-assembled on polyaniline. *Electrochimica Acta* 55 (**2010**) 4274-4280.
38. Omotayo A. Arotiba, Joseph H. Owino, Priscilla G. Baker, Emmanuel I. Iwuoha. Electrochemical impedimetry of electrodeposited poly(propylene imine) dendrimer monolayer. *Journal of Electroanalytical Chemistry* 638 (**2010**) 287-292.
39. Vivian D. van Wyk, Priscilla, G.L. Baker, Tesfaye Waryo, Emmanuel I. Iwuoha, Electrochemical evaluation of a novel BDD material for application as potential electrochemical capacitor material. *Analytical letters* 44(11), **2011**, 2005-2018
40. Overoxidized polypyrrole incorporated with Gold nanoparticles as platform for impedimetric anti-transglutaminase immunosensor. Natasha. West, Priscilla Baker, Omotayo Arotiba, Nicolette Hendricks, Abd A Baleg. Tesfaye Waryo, Fanelwa R. Ngece, Emmanuel I. Iwuoha. *Analytical letters* 44(11), **2011**, 1956-1966.
41. Synthesis and characterization of poly(propylene imine) dendrimer – Polypyrrole conducting star copolymer Abd Almonam A. Baleg, Nazeem M. Jahed, Omotayo A. Arotiba, Stephen N. Mailu, Nicolette R. Hendricks, Priscilla G. Baker, Emmanuel I. Iwuoha. *Journal of Electroanalytical Chemistry* 652 (**2011**) 18–25



42. Milua Masikini, Tesfaye T Waryo, Lundi Ngqongwa, Priscilla G Baker, Emmanuel I Iwuoha. Hydroxy-iron/ $\beta$ -cyclodextrin-film amperometric sensor for the endocrine disruptors substance Bisphenol A in aqueous medium with reduced fouling effects. *Analytical letters* 44(11), **2011**, 2047-2060.
43. Munkombwe Muchindu, Emmanuel Iwuoha, Edmund Pool, Natasha West, Nazeem Jahed, Priscilla Baker, Tesfaye Waryo, Avril Williams. Electrochemical ochratoxin A immunosensor system developed on sulphonated polyaniline. *Electroanalysis* 23(1)**2011**, 122-128.
44. 3-Mercaptopropionic acid capped ZnSe quantum dot-cytochrome P450 3A4 enzyme biotransducer for 17 $\beta$ -estradiol. Peter M. Ndangili, Abongile M. Jijana, Priscilla G.L. Baker, Emmanuel I. Iwuoha. *Journal of Electroanalytical Chemistry*, 653 (1-2), **2011**, 67-74
45. Faiza J. Iftikhar, Priscilla G.L Baker, Abdul M. Baleg, Peter M. Ndangili, Stephen N. Mailu, Emmanuel I.Iwuoha (2011) Modulation of the interfacial electrochemistry of surfactant-functionalised polypyrrole chemical sensor systems, *Electrochimica Acta*, 56 (14) **2011**, 5214-5221.
46. Peter M. Ndangili, Abongile N. Jijana, Rasaan A. Olowu, Stephen N. Mailu, Fanelwa R. Ngece, Avril Williams, Tesfaye T. Waryo, Priscilla G.L. Baker, Emmanuel I. Iwuoha. Impedimetric Response of a Label-Free Genosensor Prepared on a 3-Mercaptopropionic Acid Capped Gallium Selenide Nanocrystal Modified Gold Electrode, *International Journal of Electrochemical Science*, 6, **2011**, 1438 – 1453.
47. Rachel F Ngece, Natasha West, Peter M Ndangili, Rasaan A Olowu, Avril Williams, Nicolette Hendricks, Stephen Mailu, Priscilla Baker, Emmanuel Iwuoha. A silver Nanoparticle/Poly (8-Anilino-1-Naphthalene Sulphonic Acid) Bioelectrochemical Biosensor System for the Analytical Determination of Ethambutol., *International Journal of Electrochemical Science*, 6, **2011**, 1820-1834.
48. Rasaan A Olowu, Avril Williams, Peter M Ndangili, Rachel F Ngece, Stephen N. Mailu, Priscilla Baker, Emmanuel Iwuoha. Impedimetry and microscopy of electrosynthetic poly(propylene thiophenoimine)-co-poly(3,4 ethylene dioxythiophene) dendritic star copolymer, *International Journal of Electrochemical Science*, 6 (6), **2011**, 1855-1870.
49. Xolile Fuku, Faiza Iftikhar, Euodia Hess, Emmanuel Iwuoha, Priscilla Baker. Cytochrome c biosensor for determination of trace levels of cyanide and arsenic compounds. *Analytica Chimica Acta*, Volume 730, 12 June **2012**, Pages 49–59.
50. Metal Nanoparticle Modified Polysulfone Membranes for Use in Wastewater Treatment: A Critical Review Heidi Lynn Richards, Priscilla G. L. Baker, Emmanuel Iwuoha. *Journal of Surface Engineered Materials and Advanced Technology*, Volume 2 (3A), July **2012**, p183-193.

51. Conducting polyamic acid membranes for sensing and site-directed immobilization of proteins. Noah, Naumih M.; Omole, Marcell; Stern, Samantha; Zhang, Siyi; Sadik, Omowunmi A.; Hess, Euodia H.; Martinovic, Jasmina; Baker, Priscilla G.L.; Iwuoha, Emmanuel I. *Analytical Biochemistry* vol. 428 issue 1 September 1, **2012**. p. 54-63.
52. Electronics of Conjugated Polymers (I): Polyaniline. Kerileng M. Molapo, Peter M. Ndangili, Rachel F. Ajayi, Gcineka Mbambisa, Stephen M. Mailu, Njagi Njomo, Milua Masikini, Priscilla Baker and Emmanuel I. Iwuoha. *Int. J. Electrochem. Sci.*, **7** (2012) 11859 – 11875.
53. 3-Mercaptopropionic acid capped Ga<sub>2</sub>Se<sub>3</sub>nanocrystal-CYP3A4 biosensor for the determination of 17- $\alpha$ -ethinyl estradiol in water. E. Nxusani, P.M. Ndangili, R.A. Olowu, A. N. Jijana, T. Waryo, N. Jahed, R.F. Ajayi, P. Baker and E. Iwuoha. *Nano Hybrids* (1) p1-2, **2012**
54. Development of L-phenylalanine biosensor and its application to real sample analysis. Z A Mangombo, D Key, E I Iwuoha, P G L Baker. *Insciences J. (Sensors)* **2013**, 3(1), 1-23.
55. Highly sensitive gold overoxidized polypyrrole nanocomposite immunosensor for antitransglutaminase antibody. Natasha West, Priscilla Baker, Tesfaye Waryo, Fanelwa R Ngece, Emmanuel I Iwuoha, Ciara O'Sullivan, Ioanis Katakis. *Journal of Bioactive and Compatible Polymers* 28(2), p.167–177, **2013**
56. Few-layer Binder Free Graphene Modified Mercury Film Electrode for Trace Metal Analysis by Square Wave Anodic Stripping Voltammetry. Salma Zbeda, Keagan Pokpas, Salam Titinchi, Nazeem Jahed, Priscilla G. Baker and Emmanuel I. Iwuoha. *Int. J. Electrochem. Sci.*, **8** (2013) 11125 – 11141.
57. Baker, Priscilla GL, Nazeem Jahed, Tesfaye Waryo, Kenneth I. Ozoernena, and Njagi Njomo. "Electrokinetic and Impedimetric Dynamics of FeCo-Nanoparticles on Glassy Carbon Electrode." *Nano Hybrids* Vol. 3 (2013) 1-23.
58. Polysulfone Nanocomposite Membranes with improved hydrophilicity. Lisebo Phelane, Francis N. Muya, Heidi L. Richards, Priscilla G.L. Baker, Emmanuel I Iwuoha. *Electrochimica Acta* 128, p. 326–335 (2014).
59. Graphenated tantalum (IV) oxide and poly (4-styrene sulphonic acid)-doped polyaniline nanocomposite as cathode material in an electrochemical capacitor. Njagi Njomo, Tesfaye Waryo, Milua Masikini, Chinwe O. Ikpo, Stephen Mailu, Oluwakemi Tovide, Natasha Ross, Avril Williams, Nolubabalo Matinise, Christopher E. Sunday, Noluthando Mayedwa, Priscilla G.L. Baker, Kenneth I. Ozoemena, Emmanuel I. Iwuoha. *Electrochimica Acta* 28, p. 226-237 (2014).
60. Constitution of novel polyamic acid/polypyrrole composite films by in-situ electropolymerization. EH Hess, T Waryo, OA Sadik, EI Iwuoha, PGL Baker *Electrochimica Acta* 128, p439–447 (2014).

61. Modulation of the matrix effect of nafion on tris(bipyridine) ruthenium(II) electrochemical probes by functionalisation with 4-nitrophenylazo graphene-gold nanocomposite Christopher E. Sunday, Mawethu Bilibana, Sinazo Qakala, Oluwakemi Tovide, Kerileng M. Molapo, Gertrude Fomo, Chinwe O. Ikpo, Tesfaye Waryo, Gcineka Mbambisa, Bulelwa Mpushe, Avril Williams, Priscilla G.L. Baker, Sibulelo Vilakazi, Robert Tshikhudo, Emmanuel I. Iwuoha. *Electrochimica Acta* 128, p.128–137 **2014**,
62. Polyanilino-Carbon Nanotubes Derivatised Cytochrome P450 2E1 Nanobiosensor for the Determination of Pyrazinamide Anti-Tuberculosis Drugs. Unathi Sidwaba, Rachel F. Ajayi, Usisipho Feleni, Samantha Douman, Priscilla G.L. Baker, Sibulelo L. Vilakazi, Robert Tshikhudo, Emmanuel I. Iwuoha. *Nano Hybrids* (6) p.59-73, **2014**.
63. A nanosensor system based on disuccinimydyl–CYP2E1 for amperometric detection of the anti-tuberculosis drug, pyrazinamide International. R. F. Ajayi, U. Sidwaba, U. Feleni, S. F. Douman, E. Nxusani, L. Wilson, C. Rassie, O. Tovide, P. G. L. Baker, S. L. Vilakazi, R. Tshikhudo, E. I. Iwuoha. *Journal of Medical, Pharmaceutical Science and Engineering* 8 (2), p.1-5, **2014**.
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