

# CV Professor Priscilla Gloria Lorraine Baker

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## **Short biography**

I obtained my doctoral degree in 2004 from the University of Stellenbosch (South Africa) and have been visiting scientist to Bangor University (Wales, UK; 2004), Coimbra University (Portugal; 2005). I joined the University of the Western Cape in November 2003. Currently I am a full Professor in the Department of Chemistry, co-leader of SensorLab (43 registered post graduate students and 5 postdocs, 2014), deputy HOD (Chemistry), chairperson of Electrochemistry division of SACI and SACI council member (2006-) as well as vice chairperson of Division 1 (Analytical) of International Society for Electrochemistry (ISE, 2013)

## **Research Focus:**

SensorLab (Chemistry department, UWC) focuses on fundamental and applied electrodynamics of materials and sensors. My contribution and expertise in the ongoing search for smart materials centres around the application of AC voltammetric techniques and advanced analytical procedures for in situ characterisation and analysis of materials. Current research projects include the electrochemical impedance modeling of the reactivities of interdigitated DNA microsensor systems, design and characterisation of smart polymer materials as actuators, in situ electrochemical copolymerization of polymer nanocomposites, their modification and functionalisation for the immobilisation of biomaterials in the design of new biosensor system as well as transport mechanisms at hydrophilic polymer and hydrogel interfaces. Most recently, the research focus has shifted to coupled electrochemical techniques in order to exploit the advantages of electrochemistry in tandem with spectroscopic and microscopic evaluation of transitional states within the overall redox process.

## **Awards & Recognition**

2006- current :Chairperson: Electrochemistry division of South African Chemical Institute

2008 Guest Editor, *Electrochimica Acta* (Elsevier) 55 (14); 30 May 2010

2009: Keynote lecture, SMCBS'2009, Poland 6-10 November 2010

2010: Keynote lecture, *Analitika 2010*, 4-9 December 2010, Stellenbosch

2011: Guest Editor, *Analytical Letters*, Volume 44 (11), June 2011.

2012 Vice chairperson: Analytical division (International Society for Electrochemistry, ISE)

2013 Visiting Professor: University Cergy Pontoise, France

2014 Member of the international organizing committee: 14th Topical Meeting (ISE) 29 March to 1 April, 2014, Nanjing, China Nanjing, China

PhD graduates 2008-2013: Dr Sarah Maoela (2009) ;Dr Joseph Owino (2009) ; Dr Everlyne Songa (2009); Dr Zelo Mangombo (2010); Dr Jasmina Martinovic (2011); Dr Nicolette Hendricks (2011); Dr Heidi Richards (2012), Dr R Olowu (2012), Dr Kanyisa Nohako (2013), Dr E Hess (2013).

**Total number of publications:** 63 peer reviewed journal articles and 8 book chapters

Three most recent high impact publications.

1. Supramolecular Amperometric Immunosensor for Detection of Human Chorionic Gonadotropin. Mayreli Ortiz, Lindsay Wilson, Mary L. Botero, Priscilla Baker, Emmanuel Iwuoha, Alex Fragoso, Ciara K. O Sullivan. *Electroanalysis* 26, 1481 – 1487, 2014.
2. 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).
3. 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)