Priscilla G. L. Baker

SARChi Chair and Senior Professor of Chemistry
University of the Western Cape (SOUTH AFRICA)

Email: pbaker@uwc.ac.za
Phone: 021 959 3051/4040
Fax: 021 959 3055
Office: 4.27, 4th Floor, Chemical Sciences Building

Research Emphasis

Analytical chemistry, electrochemistry, nanomaterials, sensors for priority and emerging pollutants

Education

BSc, University of Cape Town, 1990
BSc Honours, University of the Western Cape, 1995
Masters, University of the Western Cape, 1997
PhD, University of Stellenbosch, 2004

Professional Experience

SARChi Chair: Analytical Systems and Processes for Priority and Emerging Contaminants (ASPPEC), 2018-present
Director: South African Systems Analysis Centre (SASAC), November 2017-present
Senior Professor, University of the Western Cape, 2018-present
Department HoD, University of the Western Cape, 2017-2018
Department Deputy HoD, University of the Western Cape, 2011-2016
Co-leader: SensorLab, University of the Western Cape, 2004-present
Regional Representative (Africa): International Society of Electrochemistry (http://annual70.ise-online.org/)

Research

The use of electrochemical sensors as sensitive and selective analytical tools for evaluation and monitoring of analyte species in the environment, food water and health has been established unequivocally. Semi conductive polymers and polymer composites of polyaniline, polypyrrole, polyamic acid and polysulfone may be readily synthesised as electrochemical transducers onto screen printed electrodes. These electrodes are compatible with multi array ensembles, for the purpose of multi element analysis, which reduces the cost and time associated with evaluation and quantitative analysis. Electro-responsive polymers can be used to prepare materials that swell, shrink, or bend in response to an electric signal. They can transform electrical energy into mechanical energy and have shown promising application in biomechanics, artificial muscle actuation, sensing, energy transduction, sound dampening, chemical separations, and controlled drug delivery, these polymers are an increasingly important class of smart materials. SensorLab (UWC) and LPPI (Cergy Pontoise) have partnered in collaborative research projects , student training, teaching and publication in these areas of mutual research interest. The collaboration between these international laboratories draws on specialization in physical chemistry, analytical chemistry, materials science and more recently organic synthetic chemistry. The main objective remains the design and production of novel nanostructured materials for efficient electrocatalysis and energy focused applications

ORCID: https://orcid.org/0000-0002-8878-2670

Wikipedia: https://en.wikipedia.org/wiki/Priscilla_Baker