

## Rachel Fanelwa (Nee' Ngece) Ajayi

Chemical Sciences Building, Chemistry Department, SensorLab

Tel (w): 021 959 – 3049; Cell: 079 3586 225, Email: fngece@uwc.ac.za

### SHORT BIOGRAPHY:

I am a lecturer at the Chemistry Department and a researcher at the SensorLab at the University of the Western Cape (UWC). For the past 13 years I have been at UWC during which I completed all my studies including my PhD in 2011. At UWC, I'm involved in the teaching Physical Chemistry at 2<sup>nd</sup>, 3<sup>rd</sup> and honours levels; I'm a member of the university's Senate; the Health and Safety Committee and currently the Chairperson of the Chemistry Health and Safety Committee.

### RESEARCH INTERESTS:

At SensorLab I am involved with research that involves the development of drug (particularly HIV and TB treatment drugs) metabolism biosensors and the synthesis and modification of various conducting polymeric and metallic nanomaterials and finding their application in the development of sensors and biosensors. Through my work, I have been involved in the publication of 19 peer reviewed journal articles and 3 book chapters. I am also an active member of South African Chemical Institute (SACI), International Society of Electrochemistry (ISE), World Academy of Science, Engineering and Technology (WASET) and University of the Western Cape Alumni Association.

### PROFESSIONAL RECOGNITION AND AWARDS:

- A. Thuthuka PhD Track (2011 – 2012)
- B. Knowledge, Interchange and Collaboration (KIC) Scientific Events/ Travel Grants (2013)
- C. Keynote Lecture; 1 – 6 December 2013 - The National Convention for SACI 2013, River Park, East London, South Africa
- D. South African/Kenya – Research Partnership Programme Bilateral Agreement (2014 – 2016)
- E. IRG - UK / South Africa Researcher Links Grants for Travel and Hosting of Scientific Events (2015)
- F. Columnist for Vukani; a local newspaper distributed in the townships in Cape Town.

### SELECTED PUBLICATIONS:

1. **Rachel Ngece**, Nicolette Hendricks, Natasha West, Peter M. Ndongili, Abongile Jijana, Stephen Mailu, Tesfaye Waryo, Priscilla Baker, Emmanuel Iwuoha (2010) A silver nanoparticles-poly (8-anilino-1-naphthalene sulphonic acid) bioelectrochemical sensor system for the analytical determination of ethambutol, In V. Rajendra, B. Hillbrands, P. Prabu and K.E. Geckeler (eds.): *Biomedical Applications of Nanostructured Materials*, Macmillan Publishers India Limited Pages 269-274.
2. **Rachel F Ngece**, Natasha West, Peter M Ndongili, Rasaan Olowu, Avril Williams, Nicolette Hendricks, Stephen Mailu, Priscilla Baker, Emmanuel Iwuoha (2011) '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, 1820-1834.
3. **Rachel F. Ajayi**, Unathi Sidwaba, Usisipho Feleni, Samantha F. Douman, Oluwakemi Tovide, Subelia Botha, Priscilla Baker, Xolile G. Fuku, Sara Hamid, Tesfaye T. Waryo, Sibulelo Vilakazi, Robert Tshikhudo, Emmanuel I. Iwuoha (2014) 'Chemically amplified cytochrome P450-2E1 drug metabolism nanobiosensor for rifampicin anti-tuberculosis drug' *Electrochimica Acta*, 128, 149-155.
4. **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 (2014) 'A Nanosensor System Based On Disuccinimydyl-CYP2E1 for Amperometric Detection of the Anti-Tuberculosis Drug, Pyrazinamide' *World Academy of Science, Engineering and Technology International Journal of Medical, Health, Pharmaceutical and Biomedical Engineering*, 8, 61-65.