



**Dr Mbhuti Hlophe** has a M.Sc. degree in Advanced Analytical Chemistry (University of Bristol, UK) and a Ph.D. in Electrochemistry from the North-West University (NWU) at the Mafikeng Campus. Dr Hlophe is a Senior Lecturer in Analytical Chemistry at NWU (Mafikeng Campus). His major research areas are electrochemistry and water treatment. He heads the water research laboratory at the Mafikeng Campus of the NWU. He has made several oral presentations at both local and international conferences which include the following:

- A case study of a nanofiltration method for water treatment in South Africa background paper for Meridian`s workshop in Chennai (India);
- Membrane nanotechnology in water treatment (IBSA workshop in Kalpakkam, India);
- The role of nanotechnology in the provision of potable water to rural communities (IBSA workshop in Pretoria, South Africa);
- Water promotes health – making borehole water safe by nanomembrane treatment (South Africa – European Union Side Event on Water Research for Sustainable Development which was held in Bordeaux in France);
- Implementation of Nanotechnology for Rural Water Treatment at the International Environmental Nanotechnology Conference in Chicago (USA).
- The implementation of nanotechnology for water treatment in rural South Africa.

Some relevant papers in water research that have been published include the following:

- Nanotechnology, Water and Development (<http://www.merid.org/nano/waterpaper>);
- Nanotechnology and the challenge of clean water (Nature Nanotechnology, 2 (11), 663 – 664);
- A chapter titled Challenges to Implementing Nanotechnology Solutions to Water Issues in Africa in Nanotechnology Applications for Clean Water , ISBN 9780815515784.
- Nanotechnology: Nanotechnology for clean water. Community ownership is key to nanotech water projects. Science and Development Network.  
<http://www.scidev.net/en/nanotechnology/nanotechnology-for-clean-water/opinions/community-ownership-is-key-to-nanotech-water-proje.html>;

- Determination of nitrosoamines in naturally occurring waters using differential pulse polarography (DPP);
- Kinetics of electroreduction of N-nitrosodimethylamine by voltammetric techniques in aqueous solution ;
- Clean water through research. The Water Wheel, 6 (2),14 – 15, ISBN: 0258-2244, Pretoria.

He has successfully carried out two water research projects (and participated in a third one in which he was subcontracted by Chris Swartz Water Utilization Engineers) that were funded by the Water Research Commission (WRC) of South Africa and the details of the project reports are as follows:

- Quantitative determination and removal of nitrogenous pollutants in natural water sources of North West Province (99/1/K5/715);
- The testing of a nanomembrane technology unit for the removal of nitrate, chloride, sulphate, fluoride, calcium and magnesium ions from groundwater, and the monitoring of rural consumer knowledge and attitude to water purification (K5/1529, ISBN 978-1-77005-839-2);
- Guidelines for the Sustainable Operation and Maintenance of Small Water Treatment Plants (K5/1599, ISBN 978-1-77005-869-9).

Dr Hlophe is currently conducting a collaborative research project on nanocomposite water treatment with the Center for Scientific and Industrial Research (CSIR).

Finally, Dr Hlophe was subcontracted by Umgeni Water for the development of water safety and security plans (WSSP) for Nelspruit and Rustenburg (two of the cities that will be hosting the soccer games during the 2010 FIFA WORLD CUP).