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Synthesis, characterisation and electrochemical evaluation of reduced graphene oxide modified antimony nanoparticles.

Bongiwe Silwana^{1,2}, Charlton van der Horst^{1,2}, Emmanuel Iwuoha² and Vernon Somerset^{1*}

¹*Natural Resources and the Environment (NRE), Council for Scientific and Industrial Research (CSIR), Stellenbosch, 7600, South Africa.*

²*SensorLab, Department of Chemistry, University of the Western Cape, Bellville, 7535, South Africa.*

ABSTRACT

This paper demonstrates some aspects on the synthesis and characterisation of nanoparticles of metallic alloys using polyvinyl alcohol as a stabilizer, which combines high surface area and superior hybrid properties. The present experimental design was to synthesise a nanocomposite of reduced graphene oxide and antimony nanoparticles to be used as thin films for macro and micro carbon electrodes for enhancing sensing of different toxic metal pollutants in the environment. The synthetic process of reduced graphene oxide was done using the modified Hummers method while antimony pentachloride was reduced with sodium borohydride into nanoparticles of antimony using polyvinyl-alcohol as a stabilizer. The systematic investigation of morphology was done by scanning electron microscopy and high resolution-transmission electron microscope, which revealed the synthesis of a product, consists of reduced graphene oxide antimony nanoparticles. The electrochemical behaviour of the reduced graphene oxide antimony nanoparticles coated on a glassy carbon electrode was

* Corresponding author: V. Somerset; Tel.: +27.21.8882631; Fax: +27.86.6631789; Email: vsomerset@csir.co.za; vsomerset@gmail.com

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