Makhapa Makhafola et al., J Anal Bioanal Tech 2016, 7:5(Suppl)
http://dx.doi.org/10.4172/2155-9872.C1.024

Cynoprobe online, in process cyanide analyzer

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Mintek provides world class research and development expertise, test work and process optimization for the mining industry locally and internationally. Mintek's cynoprobe online in-process cyanide analyzer for gold leaching operations continues to enjoy success, with close to 100 installations on sites across the globe. The use of the amperometric method helps limit interferences from unwanted species, makes the instrument cost effective to run, facilitates rapid measurement cycles, and enables the measurement of both free and weak acid dissociable (WAD) cyanide in one instrument. One of the notable outputs from Mintek's 2015 research is a prototype hand-held version of Mintek's laboratory "lab" cynoprobe. The lab cynoprobe was developed several years ago to broaden the impact of Mintek's cyanide measurement technology, and facilitates the use and evaluation of this amperometric technique within a client's own laboratory to assist with International Cyanide Management Code (ICMC) compliance and to evaluate the measurement principle for wider online implementation of the cynoprobe v3 as part of a broader ICMC compliance strategy. Mintek has sold over 15 of these units in recent years, and has seen increased requests from industry for the instrument. The present version of the lab cynoprobe unit is ultimately a simplified version of the cynoprobe 3 instrument. The drawback of the existing lab cynoprobe unit is the high cost associated with manufacturing the instrument. As a consequence, a project was initiated to develop a portable handheld cynoprobe unit using embedded technology to replace the expensive lab cynoprobe. In 2015 a hand-held, battery operated prototype of the unit was tested and shown to produce excellent results. A cost comparison was performed and indicated an expected manufacturing cost reduction of greater than 70% between the old lab cynoprobe and new handheld cynoprobe.

Biography

Makhapa Makhafola is currently a General Manager at Mintek. He was the Lecturer in Analytical Chemistry at Technikon Northern Gauteng (Tshwane University of Technology) and University of Venda, South Africa. He was the Director in Quality Assurance at Border Technikon (Walter Sisulu University) and at the University of Venda until he joined University of Kwa-Zulu Natal as the Director Quality Promotion & Assurance in July 2010. He has served as Member of Umalusi Council and also as Chairperson of Lovedale FET College Audit Committee. He is currently the Chairperson of DST/MINTEK Nanotechnology Innovation Centre Steering Committee. He is serving as an Academic Committee Member of QS World Ranking Universities. He has completed his Post-doctoral training in Analytical Chemistry at Indiana University and presented his research work in more than 19 international conferences and published in credible journals.

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