World Academy of Science, Engineering and Technology
International Journal of Physical and Mathematical Sciences
Vol:8, No:07, 2014

Design of a Virtual Instrument (VI) System for Earth Resistivity Survey

Authors : Henry Okoh, Obaro Verisa Omayuli, Gladys A. Osagie

Abstract : One of the challenges of developing nations is the dearth of measurement devices. Aside the shortage, when available, they are either old or obsolete and also very expensive. When this is the situation, researchers must design alternative systems to help meet the desired needs of academia. This paper presents a design of cost-effective multi-disciplinary virtual instrument system for scientific research. This design was based on NI USB-6255 multifunctional DAQ which was used for earth resistivity measurement in Schlumberger array and the result obtained compared closely with that of a conventional ABEM Terrameter. This instrument design provided a hands-on experience as related to full-waveform signal acquisition in the field.

Keywords : cost-effective, data acquisition (DAQ), full-waveform, multi-disciplinary, Schlumberger array, virtual Instrumentation (VI).
Conference Title : ICAPM 2014 : International Conference on Applied Physics and Mathematics
Conference Location : London, United Kingdom
Conference Dates : July 27-28, 2014