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GAMMA COLUMN SCANNING SERVICES FOR ZIMBABWEAN INDUSTRIES

Gamma column scanning is one of the most powerful online diagnostic techniques available for the inspection of process column internals without interrupting operation. In Zimbabwe however because of a shortage of trained gamma scanning teams, Zimbabwean industries have not been able to experience the full benefits of this powerful technology. In a country with a shortage of gamma scanning teams/experts and training facilities for them, technical cooperation from the International Atomic Energy Agency (IAEA) is helping in the introduction of the gamma scanning technique to Zimbabwean industries.

From the 11th to the 15th of March 2019, the Radioactive Isotope Applications in Industry Research Group (RAIRG) at the National University of Science and Technology (NUST) in partnership with an expert from the IAEA conducted a Gamma Column Scanning Technique Demonstration at the ZimChem Plant in Redcliff, Kwekwe. The scanning team comprised of six RAIRG members, namely: Dr Peter Baricholo, Dr Blessed Muchono, Engineer Stanford Mudono, Mr Robin T Mashingaidze, Mr Caven Dzingai and Mr Witness Chirume. The IAEA expert, Dr Rachad Alami of the National Centre for Nuclear Energy, Sciences and Technology in Morocco (CNESTEN) provided the technical support to the team for the gamma column scanning and analysis of the results. The team utilized a collimated ^{60}Co source with an activity of about 3.7 GBq (about 100 mCi) and NaI(Tl) detector system to assess the process condition of the Benzole Prefractionator distillation column located at the ZimChem Plant. The results of the gamma column scan were presented to plant operating authorities who were convinced with the usefulness of the technique for on-line investigations of the internal conditions of the dynamic processes in distillation columns/vessels.



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As the gamma scanning technology permeates the Zimbabwean industry, RAIRG with the expertise that they have acquired over the years from training courses provided by the IAEA will be ready to provide gamma scanning services to industries in the country. The use of gamma scanning technologies in Zimbabwean industries has remarkable potential benefits.



Radioisotopes Applications in Industry Research Group with IAEA expert, Dr Alami and Zimchem officials Mr Shoko and Mr Tuturu



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Radioisotopes Applications in Industry Research Group with IAEA expert, Dr Alami with the BTX plant in the background