



No: 19 - 17 - Internal
Baleseng XT 2788

NNR promotes strengthening skill and knowledge development for optimising analysis techniques - Senior Laboratory Technician, Mr Lindani Mkhize participates in fellowship programme at Australian Nuclear Science and Technology Organisation (ANSTO) in the field of Radiation Chemistry.

Lindani, a Senior Laboratory Technician at NNR, was awarded a seven week IAEA fellowship placement at ANSTO in the field of Radiation Chemistry as part of the IAEA's TC project on Strengthening the Regulatory Infrastructure.



As part of his placement, Lindani has spent time with NSTLI's Research Infrastructure, Isotope Tracing in Natural Systems (ITNS) group, under the supervision of Atun Zawadzki and her team.

The comprehensive program developed for Lindani's placement has seen him gain new skills and knowledge in radiochemistry particularly in the preparation of samples for alpha spectrometry analyses. Alpha spectrometry is a sensitive method for analyzing radionuclides that emit alpha particles. Samples undergo complex and lengthy chemical separation of the elements of interest prior to measurements by alpha spectrometry. Lindani was shown how to prepare soil and water radionuclides are of particular interest in drinking water as they can contribute to the radiological dose exposed to the public.

Lindani also spent one week with Jennifer Harrison and her team at NSTLI Nuclear Stewardship platform, to learn sequential separation of actinides (plutonium, uranium, thorium, and americium) and strontium isotopes in soil and water samples for measurements using alpha spectrometry and Cerenkov counting. Last week, Lindani spent one week with Robert Chisari and Kellie-Anne Farrarwell from the ITNS Tritium group to learn low level tritium measurements.

In his final week at ANSTO, Lindani will be provided with an overview the safety management of the ITNS radiochemistry laboratory, as well as to recap all the training material covered since arriving at ANSTO.

On his return to NNR, Lindani will apply the skill and knowledge gained at ANSTO to optimize the sample preparation technique for radium-226 analysis, develop polonium-210 analysis technique and improve uranium analysis technique by lowering the detection limits and turn-

around time. The skill and knowledge gained at ANSTO will be useful in other future projects at NNR.

Lindani's placement is one of 29 coordinated by ANSTO's International Affairs throughout Australia during 2017.

