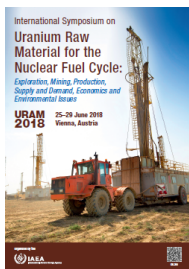


# International Symposium on Uranium Raw Material for the Nuclear Fuel Cycle: Exploration, Mining, Production, Supply and Demand, Economics and Environmental Issues (URAM-2018)



Contribution ID: 54

Type: POSTER

## Removal of Uranium and Thorium from Uranium and Rare Earth ores Processing - Case study of QA/QC on environmental analysis

*Wednesday, 27 June 2018 17:00 (1 hour)*

The removal of uranium and thorium from unconventional mining ores such as graphite, phosphate, or beach sands have been carried out for decades. During processing the ore for getting the main products, the mining tailing contains considerable amounts of radioactive elements such as uranium and thorium, which would be accumulated at some storage (in beach sand exploitation) or just released at the site (as NORM /TENORM waste from phosphate or graphite product). The study on these deposits became more intensive to assure the safe environment. Several research projects have then been set up for the recovery of by-products including uranium and/or thorium.

Furthermore, a small amount of these accompanied elements as impurities in the mineral products or rare earth raw compounds should be controlled for exporting or for further processing. The QA/QC on analysis of these element would thus be posed. XRF and other analytical techniques have been studied for supplying the demands from research projects. The use of CRMs and secondary standards for QC contribute to reliable and unbiased results and narrow uncertainties. Analytical results of samples and of various reference materials are presented and discussed with focusing on concentration range, matrix compositions, and determination limits.

### Country or International Organization

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**Session Classification:** Poster Session

**Track Classification:** Track 10. Health, safety, environment and social responsibility