

An enriched $^{100}\text{MoO}_3$ powder measurement by an array of HPGe detectors

The AMoRE (Advanced Mo based Rare decay Experiment) phase-II requires pure crystals with ultra-low radioactive contamination (< 4 micro Bq/kg of Th-228) to achieve the zero background level in the ROI (Region of Interest) of the neutrinoless double decay from the Mo-100. The raw material of the crystals, enriched $^{100}\text{MoO}_3$ powder, should have very low contamination. An array of 14 HPGe detectors (980%) was constructed at the Yangyang underground laboratory in spring 2017 for measuring a small amount of radioactive isotopes by using coincidence signals from two detectors. Activities of various radioactive isotopes in a sample of $^{100}\text{MoO}_3$ powder measured with data taken for about 80 days will be presented in this presentation.

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