

## A development of an ultra-low radioactivity measurement facility at the Center for Underground Physics in Korea

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As a few ultra-low background rare decay experiments at the Yangyang underground laboratory in Korea are being prepared and under operation, a number of ultra-low radioactivity detectors are being developed. For a screening of raw materials or detector components, an ICP-MS, an argon gas ionization counter, a ZnS counter, and a number of High Purity Germanium (HPGe) detectors are developed, installed, tested, and used. A silicon PIN photodiode based radon detector was upgraded and is being prepared for a measurement of the air from a radon reduction system which is expected to make a very low level of radon such as 10 mBq/m<sup>3</sup>. An array of 14 HPGe detectors was installed recently and is being prepared for an efficient measurement of background gamma rays from samples with bigger volumes. As candidates of detector materials, various types of scintillation crystals such as CaMoO<sub>4</sub>, Li<sub>2</sub>MoO<sub>4</sub>, and NaI(Tl) have been grown with purified raw materials and tested for their radioactivity background levels with the above mentioned instruments. In this contribution, a summary of their developments and preliminary performances together with a future plan will be presented.

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