

## **Progress of upgrading alpha-ray imaging detector in low radioactivity background**

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We have been developing an alpha-ray detector based on a time-projection-chamber in a low radioactivity background, in order to image the radioisotope concentration on the material surface. In underground particle physics, current detectors are required massive volume of target using ultra-pure material without radioactive impurities. However, uranium or thorium impurities on the surface of the detector could be reduced fiducial volume and produced background source via emanation radon. In last conference, we provided the alpha-ray imaging detector with a sensitivity of a few  $10^{-3}$   $\alpha/\text{cm}^2/\text{hr}$  in  $10\text{cm} \times 10\text{cm}$  of effective sample area. In this work, we performed to improve the sensitivity, and we would present a current status of the upgrading alpha-ray imaging detector.

### **Reference to paper (DOI or arXiv)**

### **Your gender (free text)**

**Primary author(s)** : ITO, Hiroshi (Tokyo University of Tokyo); Mr. HIROHISA, Ishiura (Kobe University); Dr. NAKAMURA, Kiseki (Tohoku University); Prof. KENTARO, Miuchi (Kobe University)

**Presenter(s)** : ITO, Hiroshi (Tokyo University of Tokyo)

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