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# Alpha-ray imaging chamber based on micro-TPC in low radioactive background

## Content

An important issue for rare-event-search experiments, such as the search for dark matter or $0\nu\beta\beta$ decay, is to reduce radioactivity of the detector materials and the experimental environment. The selection of materials with low radioactive impurities, such as isotopes of the uranium and thorium chains, requires a precise measurement of surface and bulk radioactivity. Focused on the first one, an alpha-ray imaging chamber has been developed based on a gaseous micro-time-projection chamber with a low-$\alpha$ $\mu$-PIC. The detector offers the advantage of position sensitivity, which allows the alpha-ray contamination of the sample to be imaged and the background to be measured at the same time. The detector performance was measured by using an alpha-ray source. The measurement with a sample was also demonstrated and the sensitivity is discussed in this presentation.

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