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## Development of gaseous Xe scintillator for particle identification of high intensity and heavy ion beams

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RIBF can provide very high-energy and high-intensity RI beams. However, the beam intensity is now limited due to the radiation damages and pile-up events of the particle identification (PID) detectors. Therefore, we are now developing a gaseous Xe scintillator, which is expected to have a better radiation hardness than the existing ones like plastic scintillators, ion chambers, and PPACs. It is also expected to have good energy resolution, timing, and position resolutions because Xe gas has good scintillation properties (small average energy per scintillation photon  $\sim 20$  eV and fast decay time constant  $\sim 100$  ns).

Recently, we have evaluated the PID performance ( $\Delta E$ , timing and position resolution) of the gaseous Xe scintillator by using primary beams of  $^{238}\text{U}$  and unstable nuclear beams at RIKEN RIBF. The results show that the gaseous Xe detector can be considered as a new beamline detector in all three aspects.

In this presentation, we report the details of the experiment and the results.

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