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The development of hermetic quartz chamber for future low background liquid xenon detectors

Liquid xenon detectors have been one of the leading technologies in low radioactive background experiments. For these low background detectors, Rn and its daughters are current major background to be improved. Toward the future experiment, the idea of hermetic Time Projection Chamber (TPC) is to build fully-isolated inner detector volume with VUV-transparent quartz and shield Rn atoms emanated from detector components such as stainless steel, light sensors or cables. R&D studies with small chamber are ongoing in Nagoya University towards the future experiment. In this talk, the status and future plans of this R&D project will be presented.

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