

Usage of PEN as self-vetoing structural material in low background experiments

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PEN is an industrial polyester plastic which has become interesting for the physics community as a new type of plastic scintillator. PEN scintillates in the blue regime, which is ideal for most photosensor devices. In addition, PEN has excellent mechanical properties and very good radiopurity has been achieved. Thus, it is an ideal candidate for active structural components in low-background experiments. One possible application are holders for germanium detectors operating in cryogenic liquids (LAr, LN₂). Such structures can help to reject surface and external backgrounds, boosting the sensitivity of the experiments. The R&D on PEN will be outlined and an evaluation of the first production of PEN structures for the LEGEND-200 experiment will be presented.

Secondary track (number)

R&D for Neutrinoless double beta decay experiments

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