

The nEXO radioassay program

The two neutrino double-beta decay of ^{136}Xe , with a half-life of $2.165 \pm 0.016(\text{stat.}) \pm 0.059(\text{syst.}) \times 10^{21}$ y, is among the rarest nuclear processes ever directly observed. The hypothesized neutrinoless double-beta decay of ^{136}Xe , which nEXO aims to observe, is expected to be that much rarer, with a half-life of at least 1×10^{26} y at 90% C.L. Sufficient suppression of backgrounds is, therefore, crucial to making a discovery possible. The bulk of these backgrounds for nEXO are expected to result from radioactivity in the detector components. Reducing this background contribution to a sufficiently low level requires a comprehensive material screening program. This poster describes the techniques the nEXO Collaboration employs, built on the highly successful program developed by EXO-200, in the assay of candidate materials for nEXO components. A summary of recently released results of these efforts will also be presented.

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