

Abstract Submitted
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Radon daughters plate-out as a background source in nEXO experiment DMITRY CHERNYAK, University of Alabama, NEXO COLLABORATION — nEXO is a proposed next-generation experiment searching for the neutrinoless double beta decay of Xe-136. The tonne-scale detector will utilize ultra-low background liquid xenon technology, validated by the EXO-200 experiment. With 5000 kg of xenon enriched to 90% in the isotope 136, nEXO has a projected half-life sensitivity of approximately 10^{28} years. Stringent radioactive background control and careful material selection are necessary to achieve such sensitivity. One of the potential background sources is radon daughter attachment to detector materials during their exposure to air. The decay of Po-210 can produce neutrons via (α, n) reactions, followed by capture on Xe-136. The β -decay of Xe-137 would then create background events. A survey of the literature shows a wide range of measured radon daughter attachment lengths. To better understand the causes for this variability our group at the University of Alabama has started a measurement program using various materials relevant for nEXO, monitoring environmental parameters. In this talk I will present results of this study.

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