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Radiopurity control in the NEXT-100 double beta decay experiment

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An extensive screening and material selection process is underway in the construction of the "Neutrino Experiment with a Xenon TPC" (NEXT), intended to investigate neutrinoless double beta decay using a high-pressure xenon gas TPC filled with 100 kg of Xe enriched in 136Xe. Determination of the radiopurity levels of the materials is based on gamma-ray spectroscopy using ultra-low background germanium detectors at the Laboratorio Subterráneo de Canfranc (Spain) and also on Glow Discharge Mass Spectrometry. Materials to be used in the shielding, pressure vessel, electroluminescence and high voltage components and energy and tracking readout planes have been already taken into consideration. The measurements carried out will be presented, describing the techniques and equipment used, and the results obtained will be shown, discussing their implications for the NEXT experiment.

Summary

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