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Status of the NEXT-White neutrinoless double beta decay experiment

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The \textit{Neutrino Experiment with a Xenon TPC} (NEXT-100) is a detector scheduled to start searching for $\beta\beta 0\nu$ decays in ^{136}Xe in 2020 at the Laboratorio Subterráneo de Canfranc (LSC), in Spain. The concept of a high pressure xenon gas time projection chamber with electroluminescent amplification (EL HPGXe TPC) offers an excellent energy resolution ($0.5 - 0.7\%$ FWHM at the $Q_{\beta\beta}$). The NEXT collaboration is currently operating a first phase of the NEXT-100 experiment at the LSC, called NEXT White (NEW). This detector is the largest high pressure xenon gas TPC using electroluminescent amplification in the world. The NEW detector is able to measure the energy of the event using a plane of photomultipliers located behind a transparent cathode. It is also equipped with a plane of silicon photomultipliers located behind the anode, which can be used to reconstruct the trajectories of the charged tracks in the dense TPC. The NEW detector is a scale of 1:2 in size of the NEXT-100 detector and uses the same materials and photosensors. It will be used to perform a characterization of the $0\nu\beta\beta$ backgrounds and a measurement of the standard two-neutrino double beta decay rate. In this talk an overview of the NEW detector and some recent results using calibration data are presented.

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