

Silicon photomultipliers for the nEXO light detection system

The nEXO experiment will search for neutrinoless double beta decay in 5 tonnes of liquid xenon enriched in the xenon-136 isotope. In order to achieve better than 1% energy resolution at the energy of interest, both charge signals and scintillation light will be detected. The scintillation light at 175 nm will be detected using ultraviolet-sensitive silicon photomultipliers (SiPM) covering an area of about 4.6 m². Recent results on SiPM device qualification from Hamamatsu and FBK, the development of photon-to-digital converters, and plans for large-scale SiPM integration in the nEXO detector will be presented.

Submission declaration

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