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## **Light yield and Scintillation Decay Time Constants of Te-loaded Liquid Scintillator for the SNO+ Experiment**

The SNO+ experiment is the follow-up to the Sudbury Neutrino Observatory (SNO). The heavy water that was in SNO will be replaced with a liquid scintillator of linear alkylbenzene. SNO+ will have a broad physics program which will include solar neutrinos, detecting geo-neutrinos, studying reactor neutrino oscillations, serving as a supernova neutrino detector, and carrying out a search for neutrinoless double beta decay by loading 2.3 tons of natural tellurium into the liquid scintillator. Since energy resolution is of profound importance for the experiment, it is extremely important to accurately measure the light yield of the liquid scintillator. In addition, since pulse shape discrimination is extremely important for background rejection, it is also critical to measure the scintillation decay times for alpha and beta electron excitations. A series of measurements of the liquid scintillator light yield and scintillation decay timing profiles for both Te-loaded and unloaded configurations will be described.

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