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LAB Radon Assay Board for the SNO+ Experiment

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The SNO+ experiment is located 6800 feet below the surface of the earth at SNOLAB, deep within VALE's Creighton Mine. It requires such a depth in order to be shielded from the various surface backgrounds. However, emanation of radioisotopes in the U-238 and Th-232 chains from the rock surrounding the lab can lead to other unwanted backgrounds. One such isotope, Rn-222, has a halflife of around 3.8 days, and the characteristic decay of it and its subsequent daughter isotopes allows for a specific technique for counting the amount of Rn-222 atoms collected. There are different traps employed within SNO+ to collect the Rn-222 isotope from various positions and materials. In this poster I will discuss how to build the board for the trap which will collect Rn from the linear alkylbenzene (LAB), which is the organic liquid scintillator used to detect interactions within SNO+.

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