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Liquid scintillator purification for SNO+

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SNO+ is a neutrino and double-beta decay experiment located 2km underground at SNOLAB, Canada. SNO+ developed a novel liquid scintillator based on Linear Alkylbenzene (LAB) and 2,5-diphenyloxazole (PPO). To purify all the components of the scintillator, a new process plant has been designed and constructed underground. Despite the limited space, the plant has a capacity of running several processes including the vacuum distillation, gas/steam stripping and liquid-liquid extraction. The plant also includes systems for purifying and loading additional components (PPO, bisMSB) into the scintillator. The review of the purification principles, specifications, quality control and performance of the plant will be presented.

Primary author: BIALEK, Aleksandra (SNOLAB)

Presenter: BIALEK, Aleksandra (SNOLAB)

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