

Abstract Submitted
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The SNO+ Scintillator Purification Plant and Projected Sensitivity to Solar Neutrinos in the Pure Scintillator Phase TEAL PERSHING, University of California - Davis, SNO+ COLLABORATION — The SNO+ detector is a neutrino and neutrinoless double-beta decay experiment utilizing the renovated SNO detector. In the second phase of operation, the SNO+ detector will contain 780 tons of organic liquid scintillator composed of 2 g/L 2,5-diphenyloxazole (PPO) in linear alkylbenzene (LAB). In this phase, SNO+ will strive to detect solar neutrinos in the sub-MeV range, including CNO production neutrinos and pp production neutrinos. To achieve the necessary detector sensitivity, a four-part scintillator purification plant has been constructed in SNOLAB for the removal of ionic and radioactive impurities [1]. We present an overview of the SNO+ scintillator purification plant stages, including distillation, water extraction, gas stripping, and metal scavenger columns. We also give the projected SNO+ sensitivities to various solar-produced neutrinos based on the scintillator plants projected purification efficiency.

1. R. Ford, A scintillator purification plant and fluid handling system for SNO+. AIP Conference Proceedings 1672, 080003 (2015); doi: 10.1063/1.4927998

Teal Pershing
University of California - Davis

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