Abstract Submitted
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Light Collection in the nEDM@SNS Experiment[1] VINCE CIANCIOLO, Oak Ridge National Lab, YURI EFREMENKO, University of Tennessee, Oak Ridge National Lab, LORENZO FABRIS, Oak Ridge National Lab, KENT LEUNG, North Carolina State University, PAUL MUELLER, SEPPO PENTTILA, Oak Ridge National Lab, NEDM@SNS COLLABORATION — The experimental signal in the nEDM@SNS experiment is UV ($\lambda \approx$80nm) scintillation light produced by n-^{3}He capture reaction products in superfluid Helium. Deuterated polymer coatings doped with TPB applied to the measurement cell surface enables long ultracold neutron storage times while shifting the scintillation light to blue wavelengths so that it can be captured by wavelength-shifting (WLS) optical fibers and transported several meters to an array of silicon photomultipliers (SIPMs). A full-featured small-scale prototype has been used to optimize system design (TPB coating, WLS fiber readout, SIPM processing electronics). The system design and performance results will be described.

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