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## The Scintillating Bubble Chamber (SBC)

*Tuesday 29 August 2023 17:00 (15 minutes)*

The main objective of the Scintillating Bubble Chamber (SBC) collaboration is to detect 1-10GeV dark matter by combining the electron recoil suppression of conventional bubble chambers with the scintillation properties of liquid noble elements. The use of noble elements provides two benefits. First, the potential to reduce the energy threshold to 100eV by efficiently converting most of the energy deposited by electron recoils to light to suppress bubble creation. Second, the ability to collect event-by-event energy information from the scintillation. To test this technology, SBC is building its first prototype at Fermilab. This prototype includes the scintillation system using liquid argon doped on the order of 100 ppm of Xe as the scintillator, and the light collection devices are 32 Hamamatsu VUV4 silicon photomultipliers (SiPMs). This talk serves as an exposition of the progress being made on SBC and testing of the scintillation system done at Queen's University.

### Submitted on behalf of a Collaboration?

Yes

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**Session Classification:** Dark matter and Neutrino

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