

## Dopant R&D in LArTPCs

*Monday, 26 June 2023 13:00 (15 minutes)*

Neutrinos interact with matter very weakly making it hard to detect despite being the most abundant particle in the universe. Liquid Argon Time Projection Chamber (LArTPC) detects neutrinos by measuring the resultant charge and light after the interaction between neutrino and argon particles. However, in LArTPCs, light collection efficiency is much lower than charge collection, which limits our ability to reconstruct low-energy signals. In our project, we explore adding photosensitive dopants to the liquid argon which are expected to convert the scintillation light into more ionization charge enabling us to explore the low-energy signals in the TPC. I will discuss the R&D endeavor in the Fermilab's Nobel Liquid Test Facility showcasing its ongoing efforts and advancements.

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**Session Classification:** Neutrinos: NOvA, R&D, and Hadrons