

Jim Freeman – HEP Seminar – October 31, 2023
FNAL

Organic Scintillator Status at Fermilab

Fermilab has had a 20+ year history in producing scintillator and is now one of the largest producers of organic scintillator in the world. Its scintillator has been used in a wide variety of applications including archeology, volcanology, mining exploration, agriculture, national security, as well as more traditional applications in HEP and Astroparticle physics. We will survey these applications. We have a scintillator extrusion facility and recently we have added injection molding capacity. We will discuss ongoing and near-term future projects for these facilities. We discuss ongoing R&D to improve light yield and timing performance of the extruded scintillator and hence reduce cost. We will discuss methods to improve light yield of injection-molded scintillator by refinements in the scintillator chemistry and process. Finally, we will present longer-term future plans for making new scintillating materials tailored for specific applications.