

AGING STUDIES OF THIN TPB FILMS

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Tetra Phenyl Butadiene (TPB) is the most commonly used compound to wave-shift the 128 nm scintillation light of liquid Argon down to the visible spectrum. We present a study on the loss of conversion efficiency of thin TPB films evaporated on reflective foils when exposed to light and atmosphere. The efficiency of the films is measured and monitored with a dedicated set-up that uses gaseous Argon excited by alpha particles to produce 128 nm photons and working at room temperature. In particular we performed a two years long exposure of the samples to lab diffuse light and atmosphere. We also performed more controlled aging tests to investigate the effect of storing samples in a inert atmosphere and how sample's thickness influences degradation.

Primary authors: Dr SZELC, Andrzej (Yale University); Dr SEGRETO, Ettore (Laboratori Nazionali del Gran Sasso); Prof. CAVANNA, Flavio (Yale University); Dr CANCI, Nicola (Laboratori Nazionali del Gran Sasso); Dr ACCIARRI, Roberto (FNAL)

Presenters: Dr SEGRETO, Ettore (Laboratori Nazionali del Gran Sasso); Dr CANCI, Nicola (Laboratori Nazionali del Gran Sasso)

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