

Abstract Submitted  
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**Scintillator Development for the PROSPECT Experiment**<sup>1</sup> MIN-FANG YEH, Brookhaven National Laboratory, PROSPECT COLLABORATION — Doped scintillator is the target material of choice for antineutrino detection as it utilizes the time-delayed coincidence signature of the positron annihilation and neutron capture resulting from the Inverse Beta Decay (IBD) interaction. Additionally, the multiple gamma rays or heavy ions emitted after neutron capture on either Gd or <sup>6</sup>Li respectively provide a distinct signal for the identification of antineutrino events and therefore significantly enhance accidental background reduction. The choice of scintillator and dopant depends on the detector requirements and scintillator performance criteria. Both Gd and <sup>6</sup>Li doped scintillators have been used in past reactor antineutrino experiments such as Double Chooz, Daya Bay, RENO, and Bugey3 and are currently under investigation by the PROSPECT collaboration. Their properties in terms of light yield, optical transparency, chemical stability and background rejection efficiency using Pulse Shape Discrimination (PSD) will be reported.

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