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**Pulse Shape Discrimination Characterization of Stilbene Detectors
with Light Guide Coupling and Silicon Photomultiplier Readout**

Solution grown stilbene crystals feature excellent gamma-neutron discrimination as compared to to xylene-based organic scintillators (e.g. EJ309). Thus, stilbene crystals are particularly well suited for fast neutron detection in systems with high gamma background. Silicon Photomultiplier (SiPM) detectors are arrays of reverse-biased geiger mode avalanche photodiodes, and are candidates to replace conventional photomultiplier tubes (PMTs) for certain applications. They are compact, lightweight, require low bias voltages, are insensitive to magnetic fields, and have excellent timing capabilities. These features enable the development of small, specialized hand-held radiation detection and measurement devices that would otherwise require large arrays of bulky PMTs and high voltage sources. However, SiPM cost and thermal noise increases with active surface area. For detection systems requiring high efficiencies or relatively large active volumes, such as time-correlated systems or multiplicity counters, geometrically suboptimal couplings, defined here as coupling of large crystals to small SiPMs, would become advantageous.