January 24, 2024

YAP:Ce Detectors from Berkeley Nucleonics

Blog Post

Berkeley Nucleonics is happy to offer YAP:Ce detectors as an option for your application. This material is high density, inert, and 10 times faster than NaI(TI) crystals. Key applications for this material include time of flight spectroscopy, x-ray spectroscopy, medical imaging, and nuclear science.

YAP is optically polished and does not have "dead layers" as commonly seen on NaI crystals. Along with this "dead layer" NaI crystals are hygroscopic and require a hermetic seal. Due to the seal and Beryillum entrance window needed for NaI crystals, they are always subject to leaks. This is not optimal for low-energy X-ray detection. In comparison, YAP detectors are non-hygroscopic, therefore do not require a seal and Beryillum windows, and are more efficient at soft X-ray detection.

Typically YAP is produced in small, thin crystals. However, we can manufacture these detectors in standard 2" x 2" or 3" x 3" coupled to PMT at a reasonable cost. The total price would be comparable to BGO detectors. If you are looking for a scintillator with a fast decay time and an overall fast scintillator compared to other materials, YAP may be the best choice.

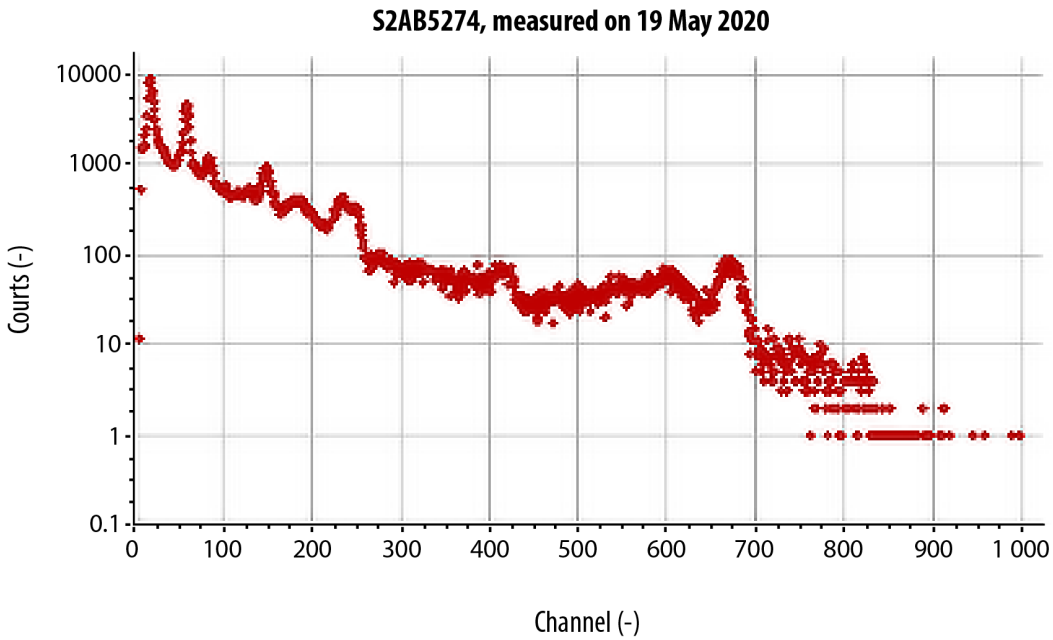

Figure resembles 2.6 MeV spectrum of a 51 mm x 51 mm YAP detector

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Citation: We would like to thank and credit Paul Schontaus of SCIONIX Holland B.V. for the YAP spectrum data.