

## Position Sensitive HPGe Detectors Using Proximity Charge Sensing

Electrode segmentation is a necessity to achieve position sensitivity in semiconductor radiation detectors. Traditional segmentation requires high granularity and increasingly smaller electrode sizes. These electrodes are complicated to fabricate and many electrodes are required in order to instrument large detector areas, each with their own readout electronics.

To simplify the fabrication process we have moved the readout electrodes onto a printed circuit board that is positioned above the detection material. In this scheme, charge will be shared among electrodes, allowing for interpolation, such that fewer electrodes are required to instrument large area detectors.

This method of readout promises to simplify detector fabrication while maintaining the position resolution that is required by fields such as homeland security, nuclear nonproliferation and arms verification, as well as nuclear physics and medical imaging.

**Primary authors:** PRIEST, Anders; Dr VETTER, Kai (Lawrence Berkeley National Lab/UC Berkeley); Dr SABOUROV, Konstantin (XIA, LLC); Dr AMMAN, Mark (Lawrence Berkeley National Lab); LUKE, Paul (Lawrence Berkeley National Lab); Dr ASZTALOS, Stephen (XIA, LLC)