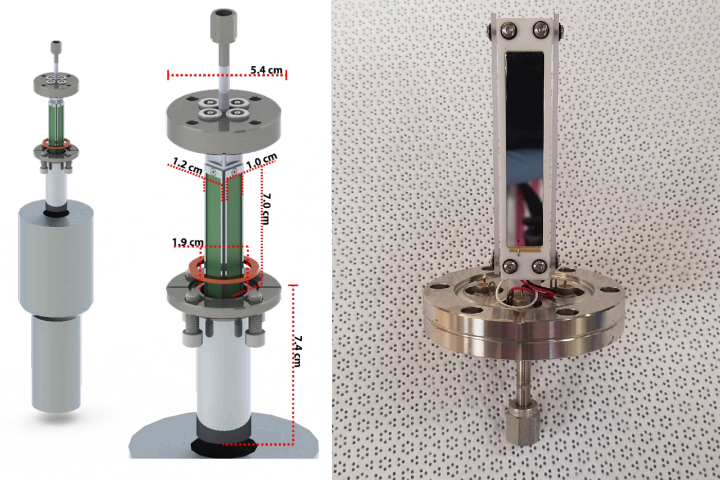
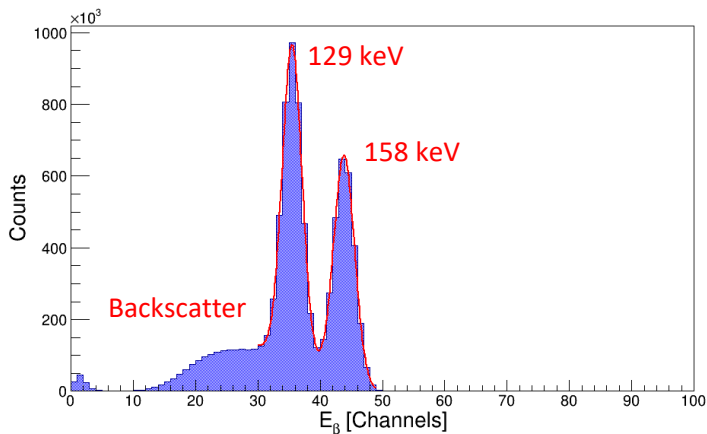


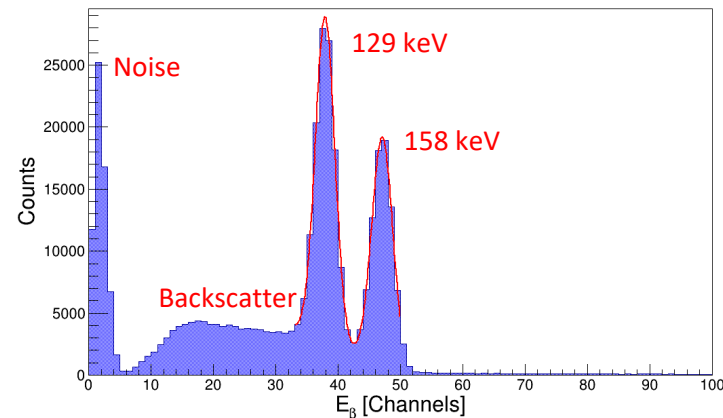
A prototype silicon beta cell for beta-gamma coincidence measurements of radioxenon, capable of resolving different conversion electrons but with a higher threshold than current plastic scintillators, was substantially improved through the use of a silicon photomultiplier well detector. Additional hardware changes made incremental improvements that reduced the threshold of the detector from nearly 45 keV to below 22 keV. Additional low energy x-rays and conversion electrons may come within observable range with further planned modifications.



(Right) Silicon chips mounted to flange feedthroughs
 (Left) Concept drawing of silicon beta cell with NaI well detector



Original beta singles histogram from Xe-131m calibration.



Beta singles from Xe-131m calibration with hardware improvements. The backscatter continuum extends to much lower channel values.



Silicon beta cell partially inserted into the SiPM based well detector.