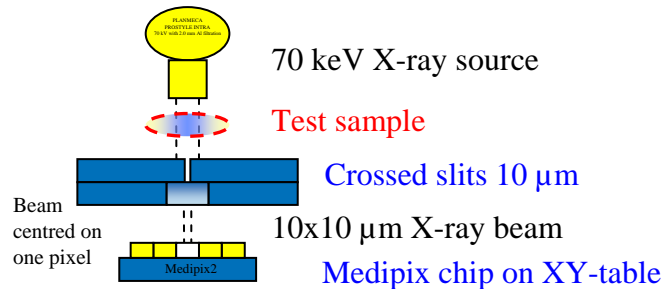


Spectral performance of a pixellated X-ray imaging detector with suppressed charge sharing

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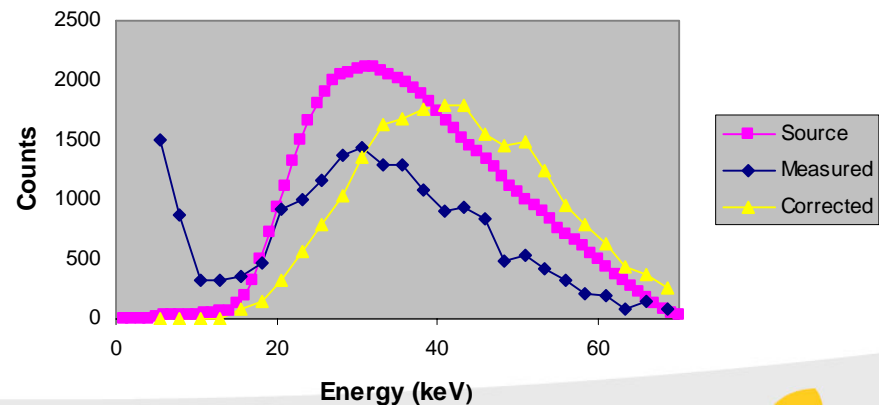
- Energy resolved imaging with small pixel size ($\sim 50 \mu\text{m}$)
 - Possible if charge sharing is corrected for?
- Experimental setup



The beam is centred by equalizing the signal on the neighbour pixels by moving the XY-table.

The measurements were done by scanning an energy window of about 2 keV through the spectrum. Without object, a spectrum corresponding to the X-ray source spectrum will be captured. This spectrum is verified if the absorption in silicon is considered.

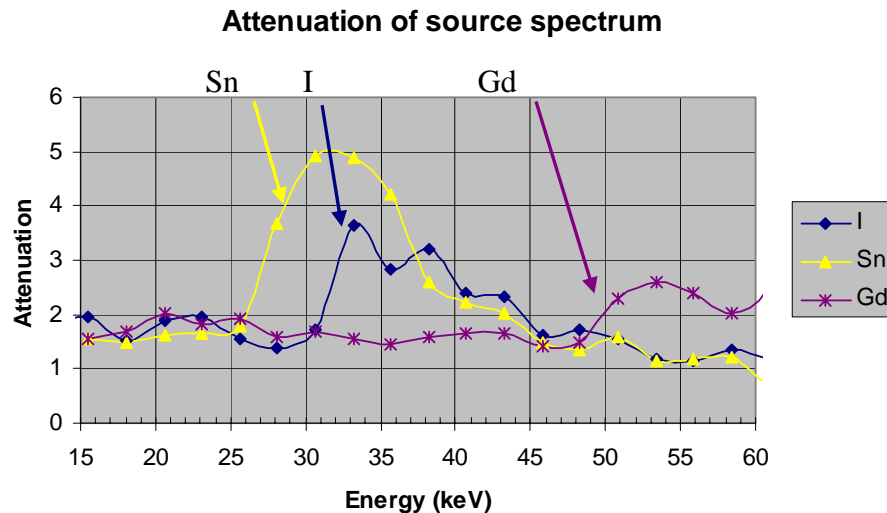
Source spectrum corrected for absorption in 300 μm silicon



Results

- Increase in attenuation
 - Reveals the K-edge energy for the sample.

Element	Atom	K_{ab} (keV)	Test sample
Sn	50	29.190	Soldering tin with 3 % silver
I	53	33.164	Iodine powder
Gd	64	50.229	Scintillator $Gd_2O_2S:Tb$



- Conclusions
 - The Medipix3 system is designed to correct the energy information by adding the collected charge between neighbouring pixels. This study shows energy resolved X-ray imaging revealing the material content of a sample will be possible with such a system.