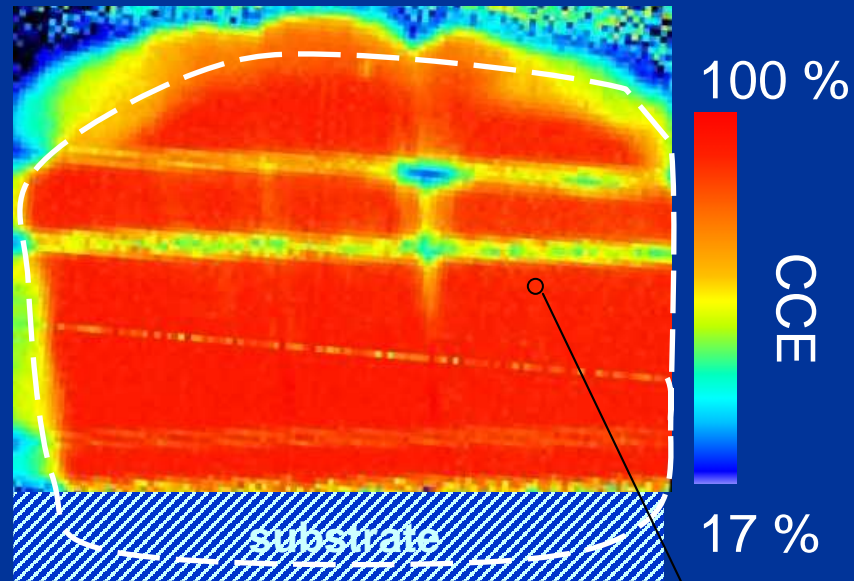
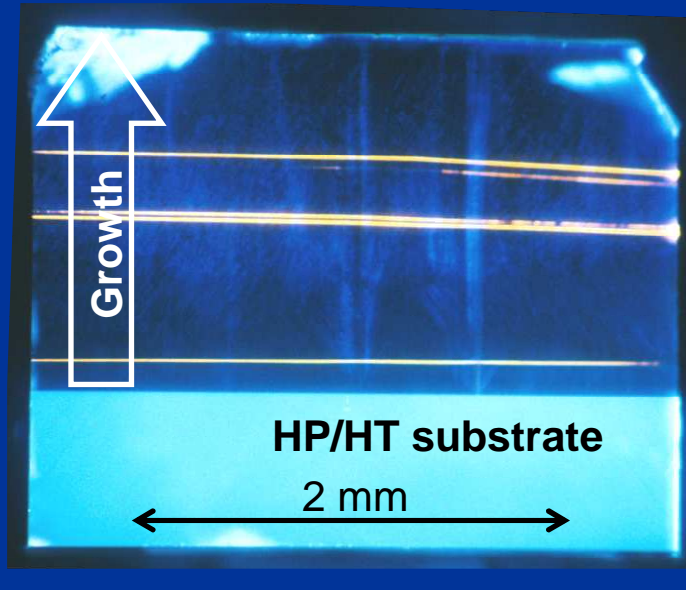


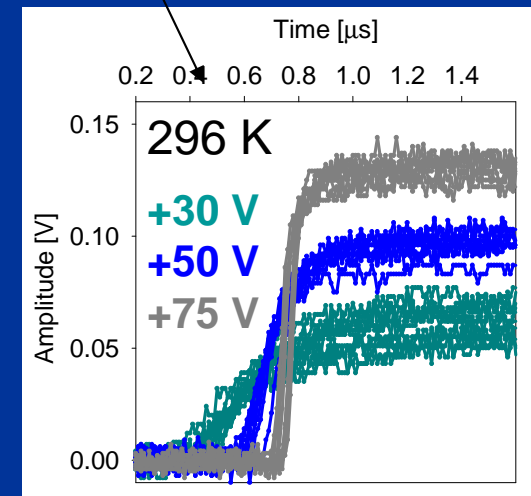
IBIC in SC diamond at the Surrey microbeam



Spatially resolved CCE mapping ($< 5 \mu\text{m}$ beam spot) with up to 4 MeV H^+ or 6 MeV He^{2+} between 100 K and 300 K

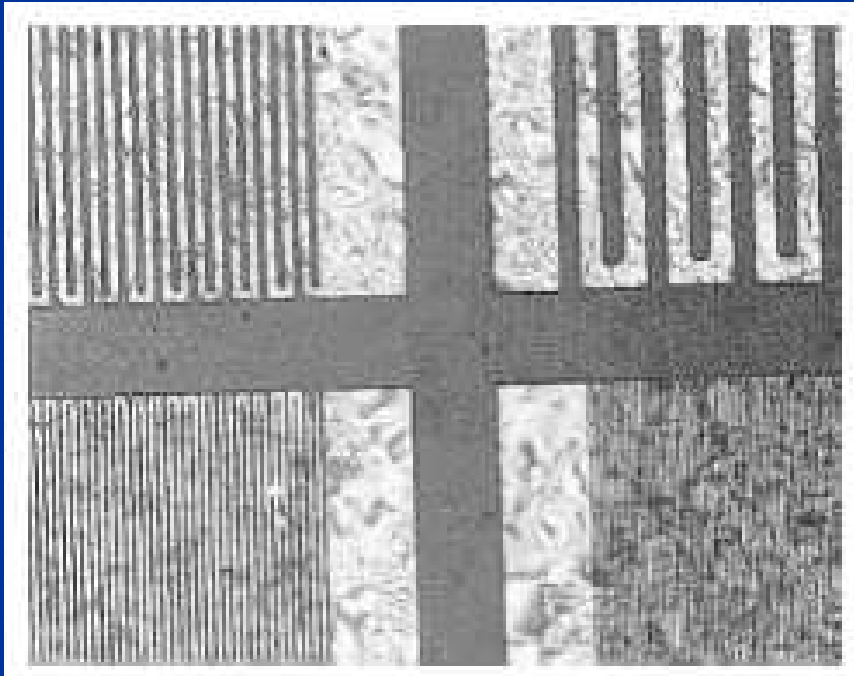
Risetime limit ~ 80 ns so far

Under development: - Current TOF with higher time resolution
- Increase of the temperature range for our studies



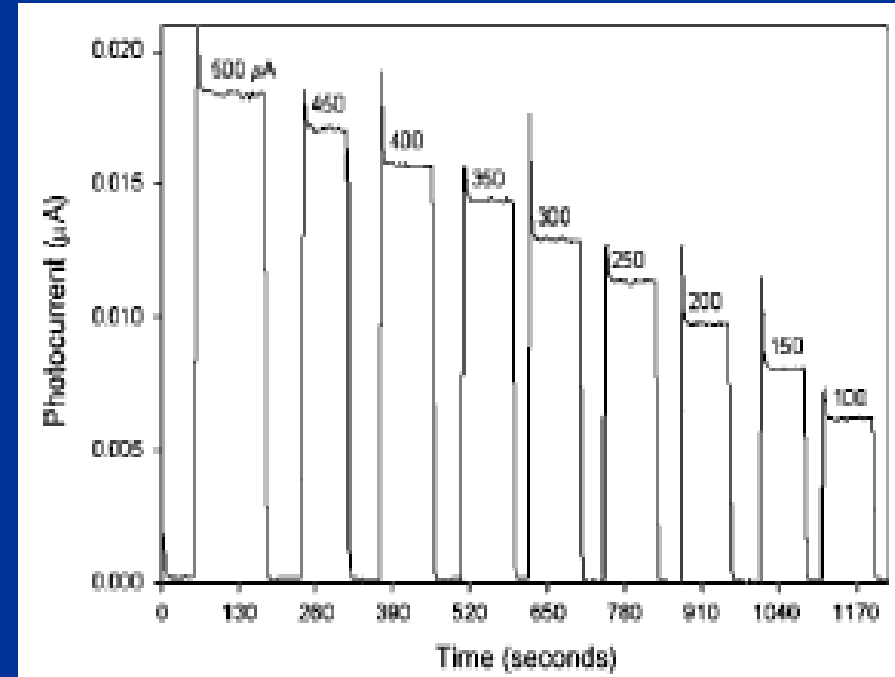
Current integrated TOF

Ion implanted contacts



Phase contrast microscopy
of 70 keV implanted boron
 $2 \times 10^{16} \text{ cm}^{-2}$ in pc CVD

(5, 10, 20 and 50 μm spacing)



Detector response under X-ray
irradiation
(20 μm spacing of coplanar electrodes)

Future charge transport studies

- Contact fabrication (photolithography, evaporation, sputtering, ion implantation)
- CCE and $\mu\tau$ - mapping at variable temperatures
 - includes priming and polarisation phenomena, comparison to X-ray induced currents
- Irradiation damage studies – neutron irradiation in Ascot (up to 10^{12} fast neutrons $\text{cm}^{-2}\text{s}^{-1}$)
- Time of flight (TOF) at variable temperatures using ^{241}Am α - particles and spatially resolved TOF at the Surrey Microbeam facility