

Preliminary test on BSRF for TaichuPix3

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Circular Electron Positron Collider



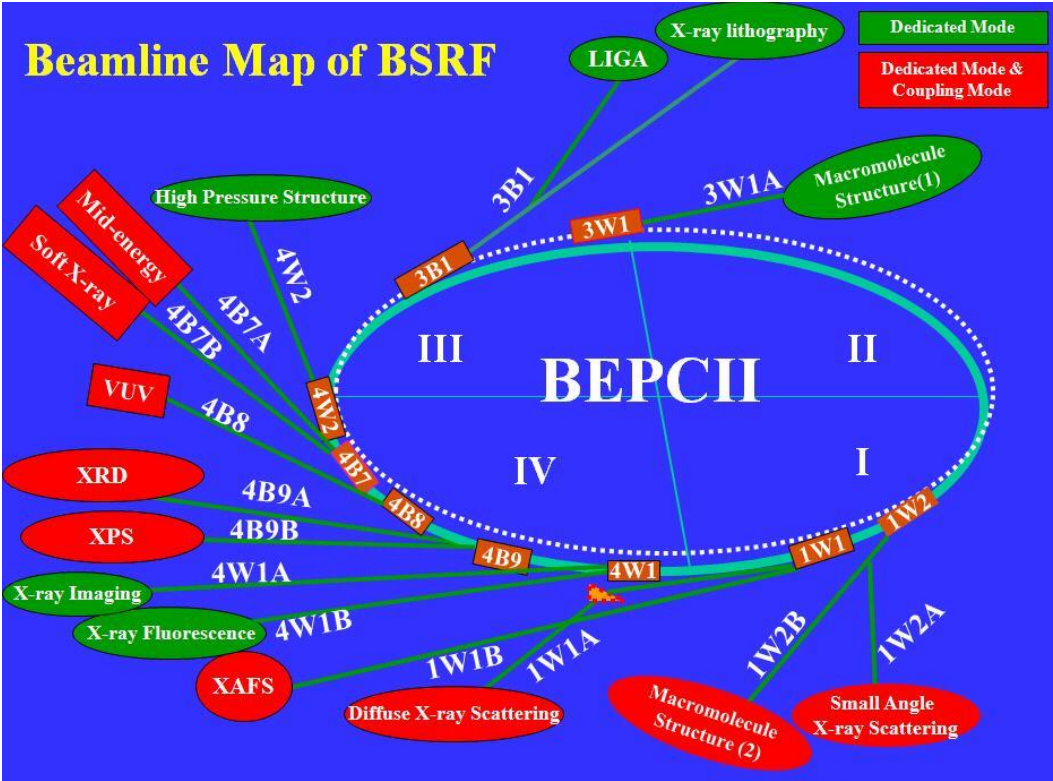
Timeline for TaichuPix3 experiment

- Reservation: From 2022.10.11 20:00 to 2022.10.12 20:00
- 19:30-21:00 Xray calibration
- 21:00-22:30 TaichuPix3 support installation
- 22:30-23:10 TaichuPix3 chip position calibration
- 23:10-01:20 First Xray imaging results from TaichuPix3
- 01:20-04:59 First 3Mrad irradiation test to region1
- 05:00-08:30 break
- 08:30-10:00 Set up irradiation region2
- 10:00-12:56 Second 3Mrad irradiation on region 2
- 13:00-15:30 Third 3Mrad irradiation on region 3
- 15:40-18:00 Forth 30Mrad irradiation on region 4
- End



Introduction of beamline

- 1W2B is a Macromolecular crystallography beamline operating in the 5-18 keV range. It's mainly used to do X-ray diffraction and X-ray Absorption Fine Structure.



Beamline Specs

Source	Wiggler
Energy Range	5-18 keV
Resolution ($\Delta E/E$)	Over 4×10^{-4}
Flux (photons/sec)	10^{12}
Beam Size (HxV)	1mm x 0.6 mm

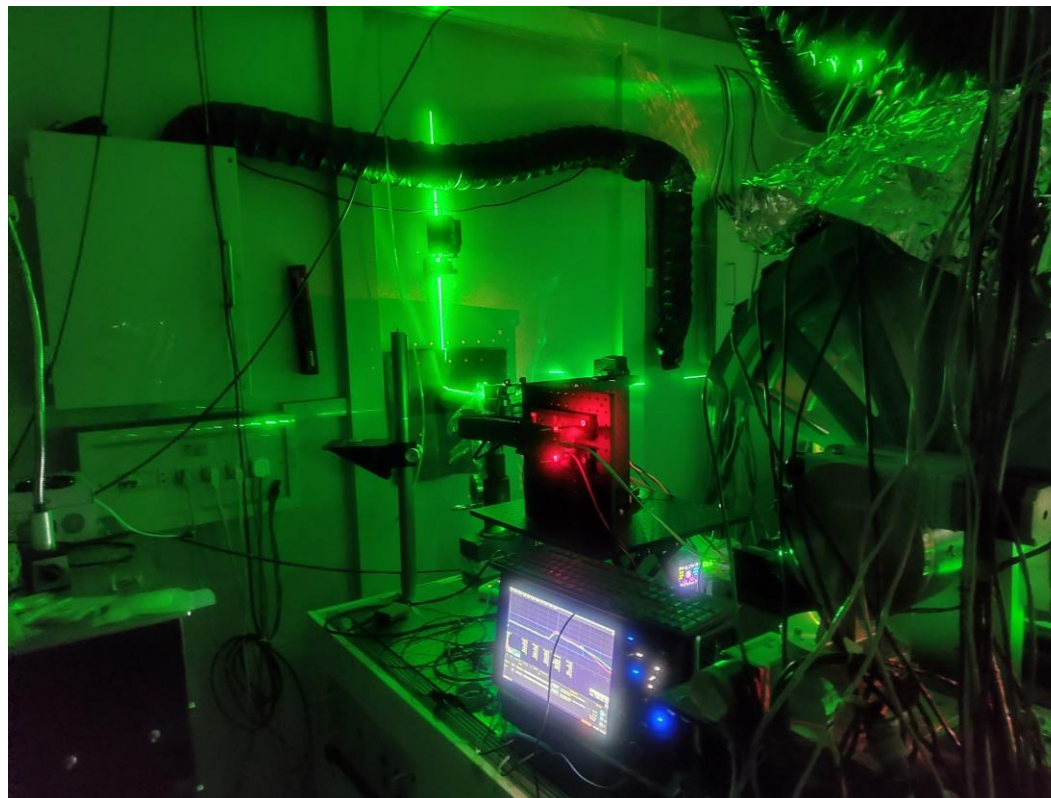


Xray calibration

- From results of calibration members: attenuation of Aluminum (Al)

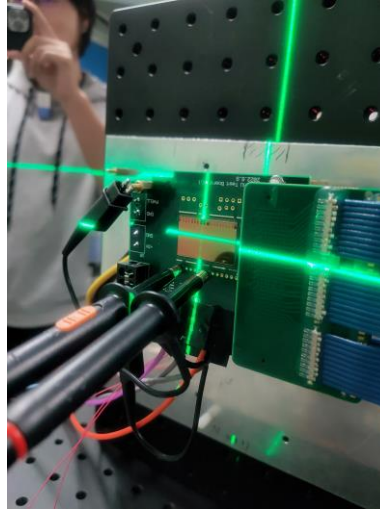
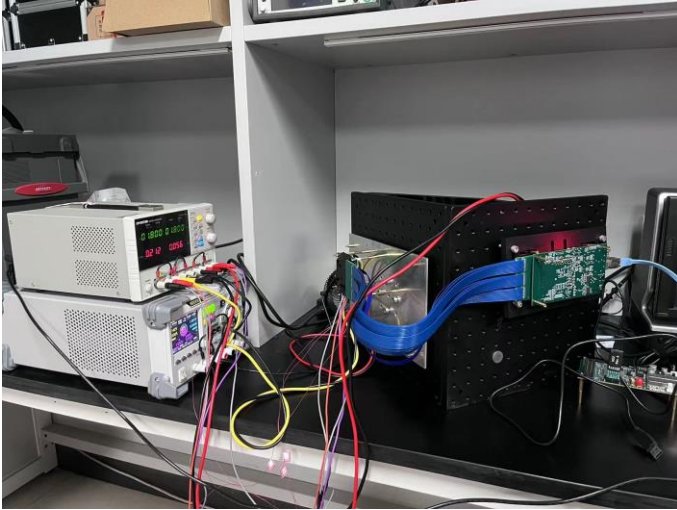
Aluminum (Al)	Irradiation dose
96 layers	0.02rad/s
64 layers	3rad/s
32 layers	394 rad/s
28 layers	722 rad/s
24 layers	1321.6 rad/s
1 layers	42927 rad/s

Distance to Xray source: ~30cm

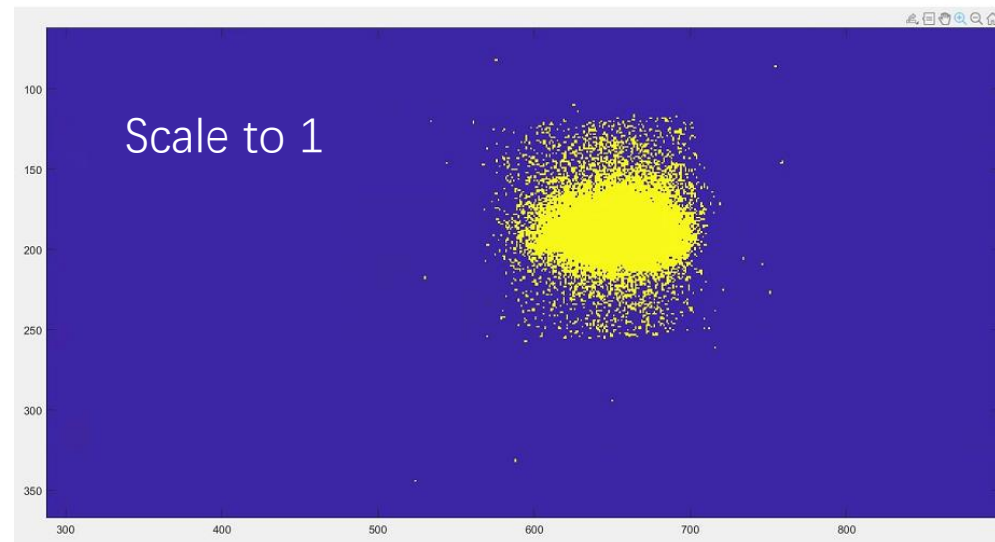
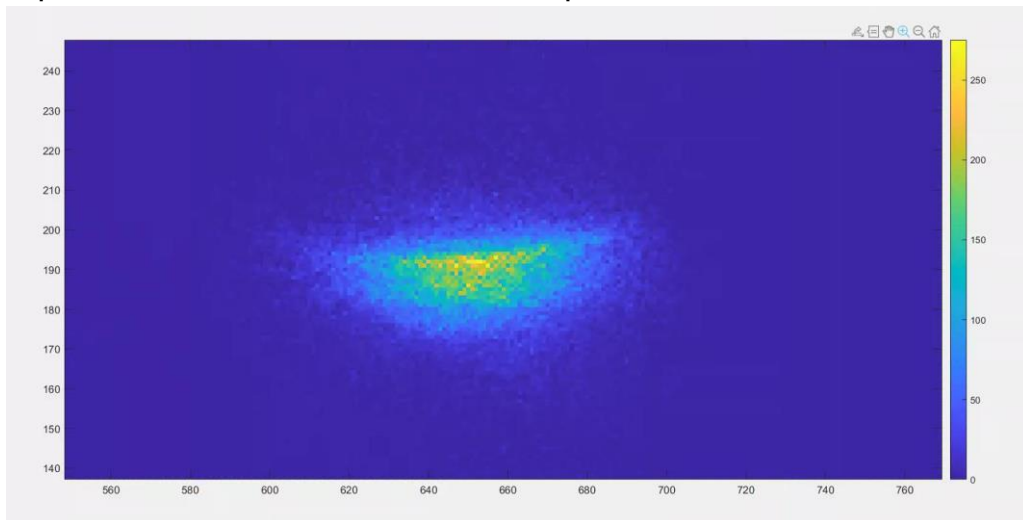




Irradiation on region1(96 layers Al,0.02rad/s)



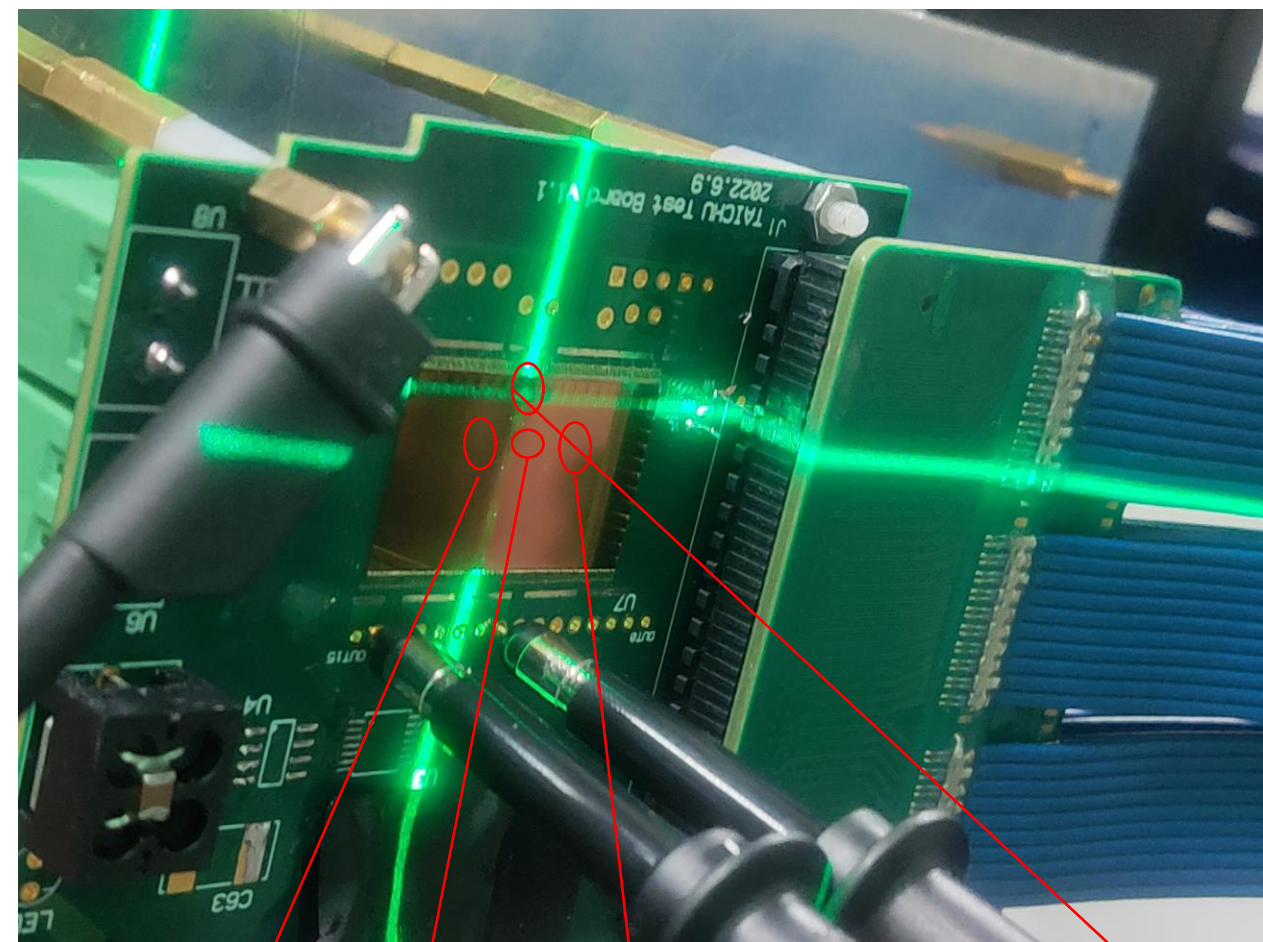
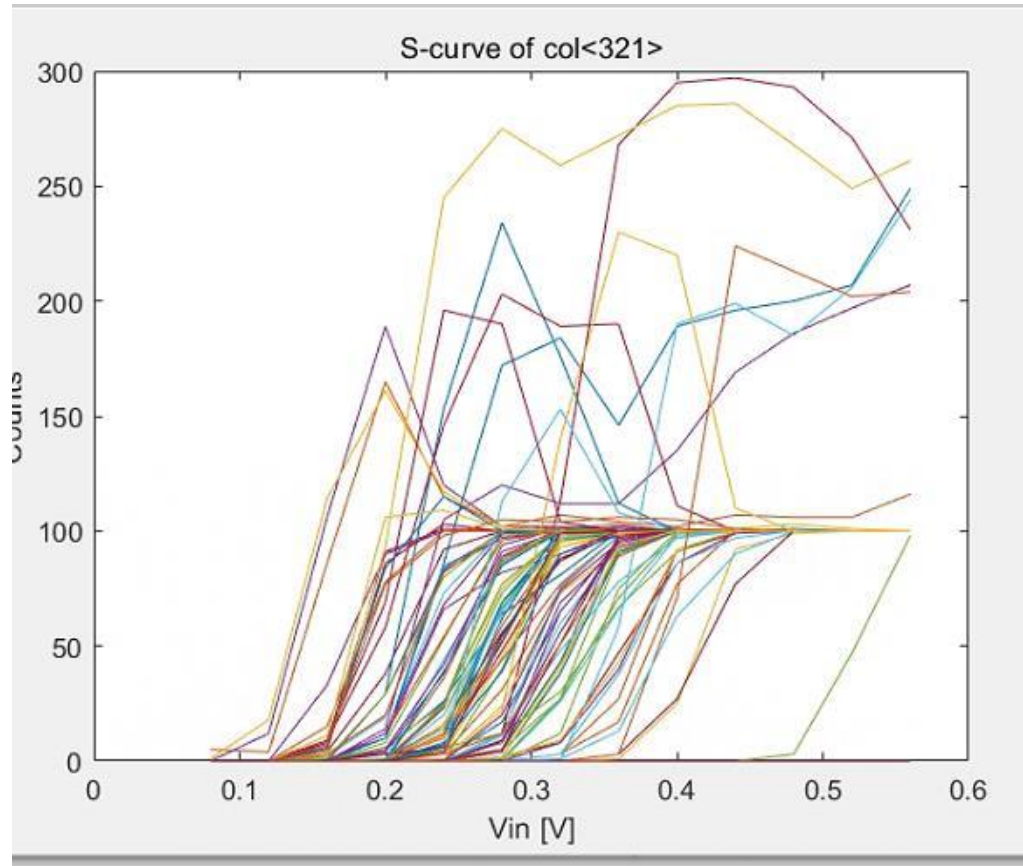
Spot size is around 40x 20 pixels, 1mmx0.5mm





Process of test

- Scan s-curve for every 5 mins



region1

region4

region2

region3



- *More results are under processing.*

Thanks for your attention!

