



Irradiations/ Birmingham Status

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Content

- Irradiation status (Barrel)
- Birmingham Facility Status
- ATLAS12A inventory



Irradiation Status

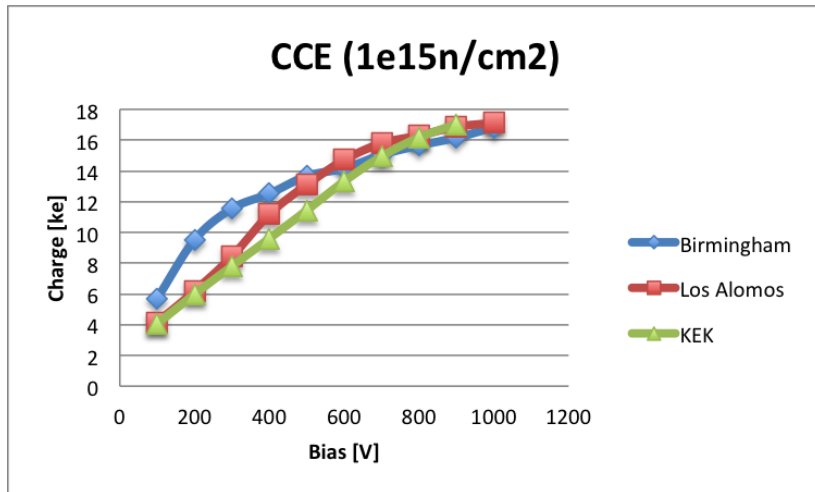
- All proton irradiations (B'ham, CYRIC and Los Alamos) done and sensors shipped to test sites
- All neutron irradiations done and sensors shipped to test sites
- All mixed (neutron and proton) irradiations done and sensors shipped to test sites
- All gamma irradiations done. Sensors will be shipped within the week
- A few more irradiations will take place (see Tony's talk)

- Please see the back up slides for details

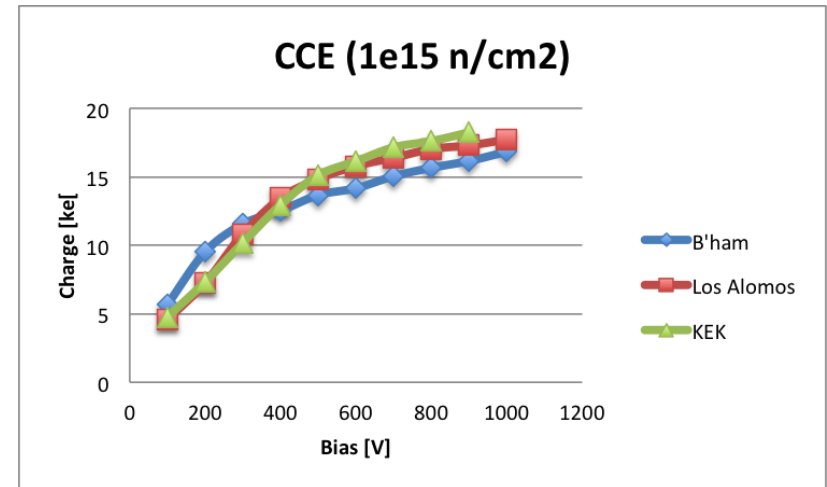


Birmingham

- See Paul's talk at the ATLAS upgrade week for details
- Birmingham is annealing the sensors during irradiation (for high beam currents)



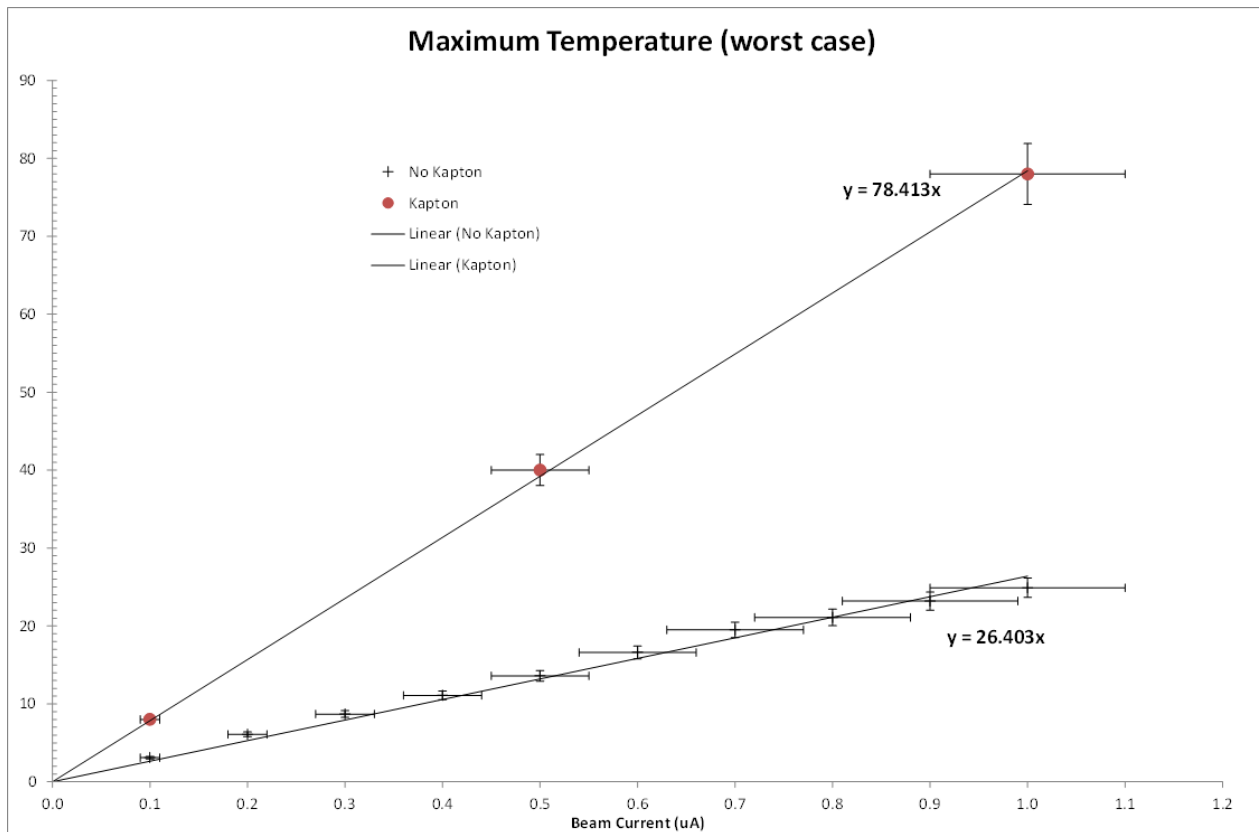
No Annealing



Annealed (Los Alamos and KEK)
80min @ 60°C



- Normally we fix the sensors in the frame using Kapton tape.
- Box is at -15°C
- Temperature measurements on a long (3cm) silicon sensor (Beam on the sensor). Gives us:





Birmingham Plan

- Design a frame where there is maximum contact between the silicon and the cold air (Tim J). i.e no Kapton
- Try and cool the CF frame with Liquid Nitrogen (or cool the air with LN)
- A new cold box and set up is nearly ready to do these tests using a heater pad (rather than the beam, which we have to pay for)
- Hopefully we will have results in a month



ATLAS12 Inventory

- All of EC sensors have been sent to Freiburg
- All the BZ1C, non-passivated and half moon sensors have been sent to Santa Cruz
- Barrel Sensors Remaining (4 shipments):
 - Slim Edge:
 - 56 BZ3C
 - 18 BZ3F
 - Standard:
 - 3 BZ3C
 - 2 BZ3F



Summary

Barrel

- All of the planned irradiations have been done
- All sensors have been shipped (gamma on the way)

Future

- Repeat irradiations with ATLAS12 and ATLAS07 at Birmingham and Ljubljana



Backup.....



Tests to be carried out

- IV/CV
- Charge Collection
- PTP
- Rint
- Cint
- Lorentz angle
- Glue on sensor (slim edge)

Pre irradiation, Post irradiation and Post Annealing



Irradiation Sites

- Birmingham, CYRIC, Los Alamos (protons)
- Ljubljana (Neutrons)
- BNL (Gamma)



Charge Collection tests on standard BZ3C

Source	Fluence	Test Site		
B'ham	5.00E+14	Liverpool	Sheffield	Ljubljana
B'ham	1.00E+15	Liverpool	Sheffield	Ljubljana
B'ham	2.00E+15	Liverpool	Sheffield	KEK
B'ham	5.00E+15	Liverpool	Sheffield	KEK
Ljubljana	5.00E+14	Ljubljana	Valencia	KEK
Ljubljana	1.00E+15	Ljubljana	Valencia	KEK
Ljubljana	2.00E+15	Ljubljana	Valencia	Glasgow
Ljubljana	5.00E+15	Ljubljana	Valencia	Glasgow
Mixed	5.00E+14	Glasgow	DESY	Valencia
Mixed	1.00E+15	Glasgow	DESY	Valencia
Mixed	2.00E+15	Glasgow	DESY	Liverpool
Mixed	5.00E+15	Glasgow	DESY	Liverpool
CYRIC	5.00E+14	KEK	Liverpool	Valencia
CYRIC	1.00E+15	KEK	Liverpool	Valencia
CYRIC	2.00E+15	KEK	Ljubljana	Glasgow
CYRIC	5.00E+15	KEK	Ljubljana	Glasgow



Barrel Irradiations ...

PTP, C_{int} , R_{int} ...

Source	Fluence	Test Site		
B'ham	1.00E+12	Glasgow	Lancaster	UCSC
B'ham	5.00E+12	Glasgow	Lancaster	UCSC
B'ham	1.00E+13	Glasgow	Lancaster	UCSC
B'ham	1.00E+14	Glasgow	Lancaster	UCSC
B'ham	1.00E+15	Glasgow	Lancaster	UCSC
B'ham	5.00E+15	Glasgow	Lancaster	UCSC
Gamma	100 kRad	Glasgow	Lancaster	UCSC
Gamma	300 kRad	Glasgow	Lancaster	UCSC
Gamma	1 Mrad	Glasgow	Lancaster	UCSC
Gamma	3 Mrad	Glasgow	Lancaster	UCSC
Gamma	10 Mrad	Glasgow	Lancaster	UCSC

Each cell has a BZ3C and a BZ3F

DONE



Lorentz Angle measurements with a BZ3C

Source	Fluence	Test Site
Ljubljana	5.00E+14	DESY
Ljubljana	1.00E+15	DESY
Ljubljana	2.00E+15	DESY
Ljubljana	5.00E+15	DESY

Complete



Slim edge tests on BZ3C

Source	Fluence	Test Site		
B'ham	1.00E+12	UCSC	Glasgow	Lancaster
B'ham	1.00E+13	UCSC	Glasgow	Lancaster
B'ham	1.00E+13	UCSC	Glasgow	Lancaster
B'ham	1.00E+14	UCSC	Glasgow	Lancaster
B'ham	1.00E+15	UCSC	Glasgow	Liverpool
B'ham	2.00E+15	UCSC	Glasgow	Liverpool
Gamma	100 kRad	UCSC	Glasgow	Lancaster
Gamma	300 kRad	UCSC	Glasgow	Lancaster
Gamma	1 Mrad	UCSC	Glasgow	Lancaster
Gamma	3 Mrad	UCSC	Glasgow	Lancaster
Gamma	10 Mrad	UCSC	Glasgow	Lancaster
B'ham-Epoxy	1.00E+12	Liverpool	Liverpool	
B'ham-Epoxy	1.00E+13	Liverpool	Liverpool	
B'ham-Epoxy	1.00E+14	Liverpool	Liverpool	
B'ham-Epoxy	1.00E+15	Liverpool	Liverpool	

Epoxy tests will only be done after non-epoxy tests

DONE