Notes from CMOS testing meeting 15/5/14

C.Buttar

List of attendees at emails at end of note.

Slides have been updated with dates when devices will be ready.

Testing current devices: TJ180 test structures

CERN designed test structures, currently only 2 at RAL/Oxford.

Todd Huffman to discuss testing with Renato and availability of probe cards if required.

Francis Anghinolfi will discuss with Walter Snoeys to determine if more test structures are available.

Testing current devices: H35 test structures

Ivan Peric will provide a list of devices and availablilty (Craig Buttar to discuss with IP).

In general assumed that similar tests can be used as for devices below.

Testing basic sensors: 3x3 pixels

It was agreed to aim for a target fluence of 2x1015cm-2 neq.

Liverpool and Santa Cruz both have fast amplifiers that will use for testing the response to sources/lasers/X-rays.

Ljubljana has a TCT setup and will look at evaluate signal development. (Geneva also has a TCT setup.)

Testing basic sensors: 5x5 pixels with fast amplifiers

Drift vs diffusion signal can be measured by looking at response with fast amplifier or by irradiating to remove any diffusion component.

The layout of pads was designed to be compatible with the Alibava system, but can be used for other readout systems.

Alex Grillo will ask the designers to look at ensuring that there are gaps in metalisation for injecting laser signals, and that one of the devices is near the edge so that edge-TCT measurements can be made.

Groups interested in participating:

Experienced groups:

Glasgow, alibava system, response to sources/laser/X-rays

Ljubljana, Alibava and single channel system, response to sources/laser, TCT and edge-TCT

Liverpool, Alibava system, response to sources

Santa Cruz

Groups with limited CMOS experience, not an issue if protocols and tests are well defined.

Oxford, interested

Cambridge, Alibava, limited studentpower

Valencia, Alibava

Freiburg, Alibava

Testing amplifiers and test structures

Both Santa Cruz and Oxford stated an interest in this area. There is a need for more effort in this area.

Alex Grillo will check number of devices that will be produced in H35 and TJ180 submissions.

General Tasks

The test board will need to be defined around time of submission as it is unlikely the pad layout will be finally defined until then. Oxford will look at doing this.

Paul Dervan will coordinate the irradiation programme.

Craig Buttar will contact Steve McMahon and ITK TB coordinator to discuss testbeams.

Gamma ray irradiations can be done in BNL and Belgium. Todd Huffman will investigate availability, if there is cooling and access through AIDA or cost. Likely dates for irradiation are August and November

Francis Anghinolfi will find out about availability of CERN X-ray+probe station setup and what dose it can deliver.

Require a small group to come up with a detailed proposal for tests and protocols, ensuring that this can be done consistently across the groups.

Craig Buttar will discuss with Richard Nickerson,Vitality Fadyev and Marcel Stanitzki.

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