Minutes of Strip CMOS sensor progress report meeting, V.1

*2015-03-02*

*Present: B.Hommels, C.Kline, J. Dopke, C. Buttar, D. Bortoletto ,,I.Mandic, I., I.Peric, Oxford group, P.Grenier, RNickerson, T.Huffman, V.Fadeyev, Z.Liang, J. Zhang, M. Stanitzki, S. Worm, RAL group,* [taken from Vidyo listing of attendees]

INDICO address: <https://indico.desy.de/conferenceDisplay.py?confId=11834>

*Next Meeting*

The next meeting will be 17th February 2015

*General*

A list was put up of institutes and participants and it was agreed Nickerson would maintain a list and would solicit corrections.

A request for institutes to help with funding the next AMS run was discussed and it was agreed that Nickerson would write to the institutes and ask them who their contact would be and if any contribution to run costs was possible. An email list will be created.

It was agreed proposals for the ITK week presentation on CMOS strip would be sent to VMR.

*CHESS-2 Chip design*

It was reported that the spec document was in progress and there had been meetings with Renato and that the document would be public soon. A March submission remains the goal but will be hard to achieve.

HVStrip1

It was reported that the HVStrip1 chip had been irradiated with protons to 10^15 neq and that the chips appear to be functional. They are cold and will be kept cold, taken to Oxford and annealed according to the standard prescription. Measurements will be made after different amounts of annealing.

*DAQ*

There was no explicit DAQ report, with it be noted that work was ongoing.

*Testing HVStrip1*

Results from Oxford were updated, with an absolute calibration of the injection capacitors relative to an 55Fe source. A uniformity of response map was shown.

Glasgow reported the response of a single pixel to 8keV,13keV and 17keV x-rays with a very linear response demonstrated. They have also characterized the MOSFETs which exhibit the properties expected.

At KIT a chip has been irradiated to 600kGy with x-rays and evaluated. A chip has been irradiated to 2.10^15neq but not yet evaluated. Several targets were used in the x-ray set and a linear response to x-ray energy observed. A small decrease in gain is seen in the linear transistors after 200kGy. Noise increases. Circular transistors also exhibit an increase in noise, but a small effect. Irradiation effects in transistors are most visible in NMOS, as expected, but the offset seems to decrease after 100kGy. The chip remains functional after the dose. Timewalk and annealing effects to be studied, as well as the neutron irradiated chip.

*Test Kit Status*

There was a discussion of the way the carrier board connects to the motherboard for CHESS chips. The new idea is to have the carrier board mounted horizontally, with two connectors. Jaya John would like to use 100-pin connectors, which limits the number of I/O signals. The proposed sacrifice is to have common input to all stand-alone amplifier in the array. This may limit some tests, namely the cross-talk measurements. However the cross-talk on the amplifiers themselves is perceived as not too important. No other objections were raised for the common input idea.