

Active pixel matrix measurements of RD50 MPW2 HV-CMOS chip

Tuesday 16 February 2021 14:00 (20 minutes)

The RD50-CMOS group aims to design and study High Voltage CMOS (HV-CMOS) chips for use in a high radiation environment. Currently, measurements are performed on the RD50-MPW2 chip, the second prototype developed by the RD50-CMOS group. Those measurements are discussed in this talk.

The active matrix of the RD50 HV-CMOS MPW2 prototype consists of 8x8 pixels with analogue frontend only. While former measurements on irradiated and non-irradiated sensors have been performed only at passive test-structures, first results of the (irradiated) active matrix are discussed in this presentation. Each pixel of the active matrix can be readout one after the other. A slow control using a shift-register allows to automatize readout.

The analog behavior of the active matrix has been studied with eTCT measurements while the digital readout is tested with injection pulses, a radioactive source and a proton beam. This talk will cover the most relevant aspects of all of these measurements, focusing on a future implementation in a telescope-like setup in a proton beam.

Primary author: SIEBERER, Patrick (Austrian Academy of Sciences (AT))

Presenter: SIEBERER, Patrick (Austrian Academy of Sciences (AT))

Session Classification: Session 3: CMOS Sensors

Track Classification: CMOS