

R&D on a novel sensor routing and test structure development

As an R&D study the Central European Consortium designed and prototyped generic test structures to allow standard monitoring of the process quality of any given vendor even during a long production cycle of several years. On the same wafer submission different routing strategies have been applied to achieve an implementation of a pitch adapter directly in the silicon sensor in the first metal layer or in a second additional metal routing layer. For the super-LHC tracking detectors these improvements will result in a substantial material budget saving.

The presentation will include the design consideration, supporting simulation studies of the test structures and different routing layouts. Results for the first and second generation of test structures are shown, including the outcome of a test beam at CERN to evaluate the regional aspects of charge collection for the different pitch adapter regions. Also the processing steps of the wafers will be discussed.

Summary (Additional text describing your work. Can be pasted here or give an URL to a PDF document):

<http://www-ekp.physik.uni-karlsruhe.de/~hartmann/VCI.onepage.pdf>

Primary author: Mr HOFFMANN, Karl-Heinz (IEKP, KIT, Karlsruhe)

Co-authors: Dr HARTMANN, Frank (IEKP, KIT, Karlsruhe); Dr STEINBRUECK, Georg (University of Hamburg); Dr MARCZEWSKI, Jacek (ITE, Warsaw); Mr ERFLE, Joachim (IEKP, KIT, Karlsruhe); Mr DRAGICEVIC, Marko (HEPHY, Vienna); Dr BERGAUER, Thomas (HEPHY Vienna)

Presenter: Mr HOFFMANN, Karl-Heinz (IEKP, KIT, Karlsruhe)