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The MightyPix HV-CMOS sensor for LHCb Upgrade 2

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The LHCb collaboration is studying options for an Upgrade 2 of the experiment, to be installed in the long shutdown LS4 of the LHC. Studies for the three planar tracking stations downstream of the LHCb spectrometer magnet focus on a mixed detector technology, with Scintillating Fibres covering the outer part of each tracking station and a silicon pixel detector based on HV-CMOS technology covering the region of highest particle density in the center of the tracking stations. A first set of HV-CMOS prototype sensors, with pixel sizes of $50 \times 165 \mu\text{m}^2$ and $100 \times 165 \mu\text{m}^2$ has been tested using a MuPix10 beam telescope in a test beam at DESY in October 2020. The test beam data are analysed using Corryvreckan. A second test beam at DESY is scheduled for March 2021. We are going to present some results from the first test beam and our plans for the future, including tests of irradiated sensors.

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