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## HEPS-BPIX2: the Hybrid Pixel Detector with TSV Processing for High Energy Photon Source in China

HEPS-BPIX2 is the second prototype of single-photon counting pixel detector with 1 million pixels developed for applications of synchrotron light sources. It follows the first prototype, HEPS-BPIX, with a pixel size of 150 µm x 150 µm and frame rate up to 1.2 kHz at 20-bit dynamic range. This paper contains a detailed description of HEPS-BPIX2 upgrade with a recently launched Through Silicon Via (TSV) processing to reduce the insensitive gap between modules. From the 60k-pixel single-module detector to large-area multi-modules systems, the transmission control protocol (TCP) hardware stack on 10 Gigabit Ethernet (10GbE) is adopted for high speed data transfer to DAQ. The calibration and images are taken at X-ray and synchrotron light, and the performance is also presented.

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