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## Pixel Detector Prototype based on IGZO TFT preamplifier and Analog counter

IGZO (indium gallium zinc oxide) semiconductor TFT (thin film transistor) is commonly used for large area flat-panel display as switching and this technology also has an advantage for making a large area detector. A prototype of 8 x 8 pixel detector based on IGZO charge sensitive preamplifier (CSA) and analog counter was designed and fabricated for future photon counting radiation system, such as CT. The size of pixel in fabricated array is 1.5 mm x 1.5 mm and whole size is 12mm x 12 mm. The size of CSA and analog counter is within 300 $\mu$ m x 300 $\mu$ m. The fabricated CSA shows the ENC of approximately 1050 electrons rms at the shaping time of 3  $\mu$ s with 1.3 mW and analog counter is operated with up to 1 Mcps in the first prototype. The energy spectrum was acquired using test pulse of MPPC/SiPM sensors since the decoupling capacitor (10fF) is implemented in pixel. The performance coupled with CdTe detector will be also presented in the conference.

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