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## Chromatic X-ray imaging with a fine pitch CdTe sensor coupled to a large area photon counting pixel ASIC

*Monday, September 4, 2017 11:00 AM (30 minutes)*

An innovative X-ray imaging sensor based on Chromatic Photon Counting technology with intrinsic digital characteristics is presented. The system counts individually the incident X-ray photons and selects them according to their energy to produce two color images per exposure. The energy selection occurs in real time and at radiographic imaging speed (GHz global counting rate). Photon counting, color mode and a very fine spatial resolution (more than 10 LP/mm at MTF50) allow to obtain a high ratio between image quality and absorbed dose. The individual building block of the imaging system is a two-side buttable semiconductor radiation detector made of a thin pixellated CdTe crystal coupled to a large area VLSI CMOS pixel ASIC. Modules with 1, 2, 4, and 8 block units have been built. The largest module has 25x2.5 cm<sup>2</sup> sensitive area. Results and images obtained from testing different modules are presented.

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