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(Invited) Direct-detection Monolithic Active CMOS sensors for X-ray Free-Electron Lasers and future ultimate storage ring light sources

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X-ray Free-Electron Lasers (XFELs) are now bringing new opportunity in coherent X-ray Science. Future X-ray sources such as high-repetition XFELs and ultimate storage ring (USR) light sources are anticipated to advance CXS further by delivering higher repetition rate and higher brilliance of coherent X-ray beam. In this talk, we first review the current detector status at the XFEL facility SACLA [1], and try to outlook the future opportunities from the viewpoint of X-ray imaging detectors by discussing the lessons learned in the development of SOI sensor technologies [2]. Finally, a proposal of a stacked-sensor concept for future photon science in the photon energy range up to 30 keV will be presented.

Reference & Literature:

1. T. Kameshima, et.al., Rev. Sci. Instr., 85, 033110 (2014).
2. T. Hatsui, et.al., Proc. International Image Sensor Workshop, Article 3.05 (2013).

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