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## Pixel Detectors for the LCLS

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Fourth generation light sources such as the LCLS represent a unique and challenging environment in which to operate x-ray detectors. Their pulsed time structure, in which a large number of x-rays impinge on a sample essentially simultaneously, demands detectors capable of handling large signals while maintaining sensitivity to single photons. Both energy and absorption depth in silicon of the delivered x-rays vary by orders of magnitude. Under certain conditions during a single 50 femtosecond long burst, parts of a detector can absorb a radiation dose similar to that seen by the inner pixel layers at the LHC over a ten year period. These detectors enable a diverse range of science from fusion energy and biology to material science and chemistry. To meet all these needs a suite of detectors is being designed and manufactured.

**Primary author:** KENNEY, Chris (SLAC)

**Presenter:** KENNEY, Chris (SLAC)

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