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From proof-of-principle to daily operation: Pixel detector technology opens up new avenues in scanning imaging

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PILATUS technology has been developed over several years from a first proof-of principle to a commercial detector in daily operation in many laboratories around the world. Alongside with this development, scanning imaging with 2D detectors has seen a rapid development and is meanwhile applied in many biomedical and materials science applications. The methodological developments enabled by state of the art pixel detector technology gained so much momentum, that current detection systems are not just fully utilized but actually already limiting further advances: Science cases for the next generation single photon counting and charge integration detectors are readily available.

Examples from the fields of scanning small-angle X-ray scattering (SAXS) and ptychographic coherent diffractive imaging will be shown. Utilization of current detector technology as well as limitations and how they may be overcome by ongoing developments in the detector community will be sketched.

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