

# **X-ray Crystallography with the EIGER R 4M Large-area HPC Detector**

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In the past years, Hybrid Photon Counting (HPC) detectors have seen strongly increased use in X-ray powder and single-crystal diffraction. HPC detectors offer a number of unique advantages such as a direct detection for high quantum efficiency and excellent spatial resolution in addition to the absence of readout noise and detector dark signal for improved data quality. The recently introduced EIGERR4M is an HPC detector for laboratory applications that rivals image plates in size and features the established advantages of HPC technology. Furthermore, it provides the unique advantage of combining high pixel density and spatial resolution with large active area. Altogether, the advantages of this large-area HPC detector enables shorter measurement times and higher throughput, and facilitates experiments in the laboratory that were previously only feasible at synchrotron beamlines.

The presentation will give a short outline of the differences between EIGER and PILATUS3 highlighting key aspects of the new detector family. Examples from various experiments will illustrate the advantages of high pixel density, large-active area and direct detection in combination with noise-free readout and the absence of detector dark signal.