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Photon counting microstrip detector for time resolved powder diffraction experiments

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The MYTHEN detector is a silicon microstrip detector with single photon counting readout developed powder diffraction experiments at the Swiss Light Source. A one dimensional 30k channels system covering 120 degrees has been installed at the Material Science beamline and is being used for users operation since the end of 2007. Due to its massively parallel detection of X-rays and fast readout, it is optimized for time-resolved or dose-critical measurements that can be performed in fractions of a second on the whole angular range. The intensity of the synchrotron radiation source can be exploited thanks to the high counting rate capability. Promising results have been obtained also for other synchrotron radiation applications like imaging and pump and probe experiments. The detector characteristics will be described in detail and its outstanding performances will be shown.

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