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**Ultra Fast Framing X-Ray Detector for Time-Resolved Synchrotron Experiments.** R.D. Durst, M. Benning, D. Khazins, B. Becker, Y. Diawara, S. Medved, V. Sedov, G. Wachter, Bruker AXS, Madison, WI 53711 USA.

A new fast photon-counting X-ray imaging detector capable of frame rates of up to 1 million frames per second is described. This detector is capable of studying fast kinetic processes such as chemical reactions, phase transitions, photo-excited processes, etc. with unprecedented time resolution. The principle of operation of the detector is described and examples of microsecond-resolution data are presented.