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New detectors for new light source: Progress in semiconducting detectors for spectroscopy and imaging applications at next generation synchrotron sources

ABDUL RUMAIZ, Brookhaven National Laboratory

The development of new synchrotron sources has led to a remarkable increase in brightness and coherence. This development, combined with improved energy and spatial resolution has led to new measurements techniques. However, it is well known that most of the synchrotron and x-ray free electron laser (XFEL) experiments are detector limited. Complete realization of the scientific capabilities of new synchrotrons and XFEL will require novel detection schemes. As with everything else, there is no one size fits all. The requirement of detectors is different depending on the experiment. This presentation will discuss some of the detector developments efforts for the next generation sources. In particular the presentation will highlight the detector R&D effort at National Synchrotron Light Source II at Brookhaven National laboratory. The talk will describe some of these projects and the scientific techniques for which they are intended. .