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(Invited) Position Sensitive Detectors in Security Imaging

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Both one-dimensional and two-dimensional position sensitive detectors are deployed widely for creating X-ray images in the security inspection industry. The majority of these sensors are based on scintillation detectors with photodiode readout. However, the constraints in image quality, allowable dose to the object, the need for quantitative inspection and control over manufactured cost lead to a careful optimization of detector design for every application. The design of position sensitive detectors for low energy X-ray (< 300 keV), high energy X-ray (> 1 MeV) and Compton scatter based X-ray imaging systems are reviewed and example detector configuration and associated images are presented.

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