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(54) **X-RAY IMAGING SYSTEM AND METHOD**

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See application file for complete search history.

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(57)

ABSTRACT

An X-ray imaging system can include an X-ray source that
projects a beam of X-ray radiation and an X-ray detector
positioned to receive the beam of X-ray radiation at a loca-
tion. The X-ray detector can include: (i) a monolithic sub-
strate having a first side and a second side opposite the first
side, (ii) a scintillation layer arranged upon the first side and
including a first region and a second region, the first region
having a first X-ray sensitivity and the second region having
a second X-ray sensitivity different than the first X-ray sen-
sitivity, and (iii) a photosensor array arranged upon the sec-
ond side. The X-ray source and X-ray detector can be con-
figured to adjust the location at which the X-ray detector
receives the beam of X-ray radiation such that the location is
primarily within the first region or the second region.

12 Claims, 6 Drawing Sheets

