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(54) **SYSTEM AND METHOD OF ALIGNING SCINTILLATOR CRYSTALLINE STRUCTURES FOR COMPUTED TOMOGRAPHY IMAGING**

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(58) **Field of Search** 378/19, 4; 250/367, 250/370.09

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(57) **ABSTRACT**

The present invention discloses a method of aligning scintillator crystalline structures for computed tomography imaging and a system of use. Crystal seeds are deposited inside a glass melt and are then grown to form a plurality of layer crystallites. While growing the crystallites, a field is applied to align each crystallite structure in a uniform orientation. As a result, the crystallites are configured to reduce light scattering and improve the overall efficiency of the CT system. A CT system is disclosed implementing a scintillator array having a plurality of scintillators, each scintillator being formed of a plurality of uniformly aligned crystallites. Each crystallite includes a receiving surface and an exiting surface configured perpendicular to an x-ray beam. Further, the receiving surface and the exiting surface are connected by a plurality of surface walls arranged parallel to the x-ray beam.

11 Claims, 4 Drawing Sheets