



US007076025B2

(12) **United States Patent**
Hasnah et al.

(10) **Patent No.:** **US 7,076,025 B2**
(45) **Date of Patent:** **Jul. 11, 2006**

(54) **METHOD FOR DETECTING A MASS DENSITY IMAGE OF AN OBJECT**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/848,969**

(22) Filed: **May 19, 2004**

(65) **Prior Publication Data**
US 2005/0259788 A1 Nov. 24, 2005

(51) **Int. Cl.**
G01T 1/36 (2006.01)

(52) **U.S. Cl.** **378/82; 378/84**

(58) **Field of Classification Search** **378/70, 378/71, 80, 82, 83, 84, 87, 89, 73**
See application file for complete search history.

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(57) **ABSTRACT**

A method for detecting a mass density image of an object. An x-ray beam is transmitted through the object and a transmitted beam is emitted from the object. The transmitted beam is directed at an angle of incidence upon a crystal analyzer. A diffracted beam is emitted from the crystal analyzer onto a detector and digitized. A first image of the object is detected from the diffracted beam emitted from the crystal analyzer when positioned at a first angular position. A second image of the object is detected from the diffracted beam emitted from the crystal analyzer when positioned at a second angular position. The first image and the second image are combined mathematically to derive a mass density image of the object.

20 Claims, 3 Drawing Sheets

