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(54) **IMAGING METHOD BASED ON ATTENUATION, REFRACTION AND ULTRA-SMALL-ANGLE-SCATTERING OF X-RAYS**

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(58) **Field of Search** 378/62, 70, 71, 378/82, 83, 84, 85, 86, 87, 88, 89, 90

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(57) **ABSTRACT**

A method for detecting an image of an object by measuring the intensity at a plurality of positions of a transmitted beam of x-ray radiation emitted from the object as a function of angle within the transmitted beam. The intensity measurements of the transmitted beam are obtained by a crystal analyzer positioned at a plurality of angular positions. The plurality of intensity measurements are used to determine the angular intensity spectrum of the transmitted beam. One or more parameters, such as an attenuation property, a refraction property and a scatter property, can be obtained from the angular intensity spectrum and used to display an image of the object.

22 Claims, 5 Drawing Sheets

