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(54) Title: METHOD AND APPARATUS FOR ESTIMATING THE EFFICIENCY OF A SOLAR CELL

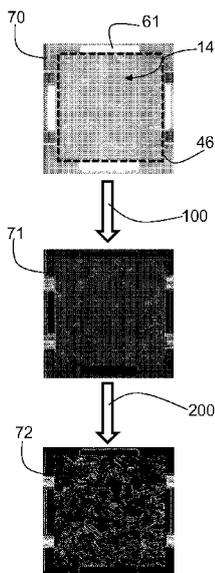


Fig. 7

(57) Abstract: A method for estimating the efficiency of a solar cell to be manufactured from a wafer is disclosed, wherein the efficiency estimate is obtained from a density of crystallite boundaries on a surface of the wafer. In embodiments the density of crystallite boundaries is obtained from a digital image of the surface of the wafer, from which first a filtered image, and then a binary image is generated. The binary image is evaluated to obtain the density of crystallite boundaries. Alternatively, the efficiency estimate is obtained from the sizes of crystallites on the surface of the wafer. An apparatus for obtaining the efficiency estimate is also disclosed.



A. CLASSIFICATION OF SUBJECT MATTER***H01L 21/66(2006.01)i, H01L 31/18(2006.01)i, H01L 31/042(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H01L 21/66; H01L 21/322; G01N 21/66; C30B 29/06; H01L 31/18; G02F 1/13; G06K 9/00; H01L 31/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

crystallite, density, efficiency, estimate

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006-0274931 A1 (VICKY SVIDENKO et al.) 07 December 2006 See paragraphs [0025]-[0030]; claims 1, 10; and figures 1-6.	1-46
A	WO 2010-067366 A1 (XJET CO., LTD.) 17 June 2010 See paragraphs [0018]-[0026]; claims 1-4; and figures 1-2.	1-46
A	WO 2009-121133 A1 (BT IMAGING PTY LTD) 08 October 2009 See paragraphs [0048]-[0049]; claim 1; and figures 1A-1B.	1-46
A	JP 2010-083712 A (SUMCO CO., LTD.) 15 April 2010 See abstract; paragraphs [0017]-[0035]; and figure 1.	1-46
A	KR 10-2005-0004081 A (AU OPTRONICS CORP.) 12 January 2005 See pages 2-4; claim 1; and figure 5.	1-46

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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Information on patent family members

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