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(71) Applicant (for all designated States except US): **H. LEE MOFFITT CANCER CENTER AND RESEARCH INSTITUTE, INC.** [US/US]; 12902 Magnolia Drive, Tampa, FL 33612-9497 (US).

## (72) Inventors; and

(75) Inventors/Applicants (for US only): **HEINE, John, J.** [US/US]; 4916 Sunnybrook Drive, Unit 26, New Port Richey, FL 34653 (US). **SELLERS, Thomas, A.** [US/US]; 1032 Royal Pass Road, Tampa, FL 33602 (US).(74) Agents: **AARONSON, Lawrence, A.** et al.; McKeon, Meunier, Carlin & Curfman, LLC, Suite 900, 817 W. Peachtree Street NW, Atlanta, GA 30308 (US).

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## Declarations under Rule 4.17:

— of inventorship (Rule 4.17(iv))

## Published:

— with international search report (Art. 21(3))

[Continued on next page]

## (54) Title: METHOD FOR ASSESSING BREAST DENSITY

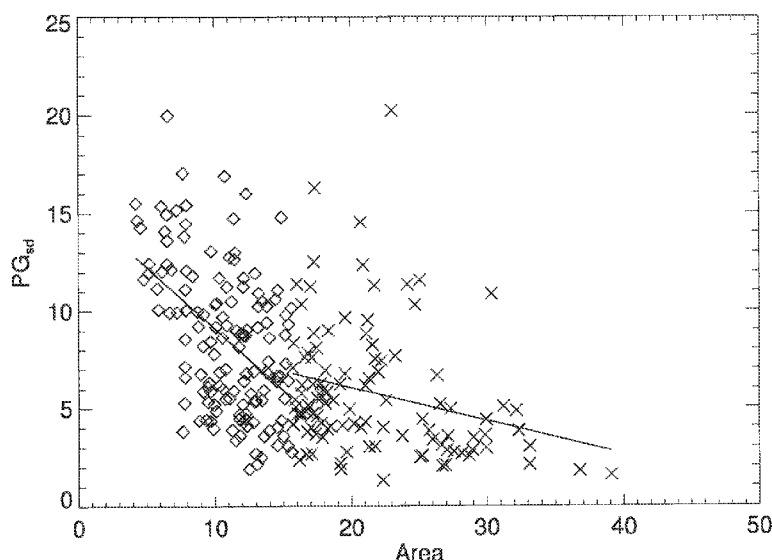


FIG. 7

(57) Abstract: Breast density is a significant breast cancer risk factor measured from mammograms. Evidence suggests that the spatial variation in mammograms may also be associated with risk. The variation in calibrated mammograms as a breast cancer risk factor was investigated and its relationship with other measures of breast density was explored using full field digital mammography (FFDM) as described herein. A matched case-control analysis was used to assess a spatial variation breast density measure in calibrated FFDM images, normalized for the image acquisition technique variation. The findings indicate the variation measure is a viable automated method for assessing breast density. Insights gained by this work may be used to develop a standard for measuring breast density.



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**A. CLASSIFICATION OF SUBJECT MATTER***A61B 6/03(2006.01)i, G06T 1/00(2006.01)i, G06F 19/00(2011.01)i, A61B 5/00(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)

A61B 6/03; A61B 6/04; G06K 9/00; G06K 9/34

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)

eKOMPASS(KIPO internal) &amp; Keywords:breast, mammogram, digital, image, statistic, cancer, breast density

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                                                       | Relevant to claim No.                                                  |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| X<br>A    | US 2001-0043729 A1 (MARYELLEN L. GIGER et al.) 22 November 2001<br>See abstract, paragraphs [0030]-[0042], claims 1-27, and figures 1-4. | 1,2,15,26,27,40,47<br>,48,66<br>3-14,16-25,28-39<br>,41-46,49-65,67-72 |
| X<br>A    | US 2009-0324049 A1 (KONTOS DESPINA et al.) 31 December 2009<br>See abstract, paragraphs [0025]-[0039], claims 1-9, and figures 1-6.      | 26,47                                                                  |
| A         | US 2008-0159613 A1 (LUO HUI et al.) 03 July 2008<br>See abstract, paragraphs [0025]-[0036], claims 1-17, and figures 1-5.                | 1-72                                                                   |
| A         | US 2007-0025503 A1 (MAGNUS HEMMENDORFF) 01 February 2007<br>See abstract, claims 1-7, and figures 1-3.                                   | 1-72                                                                   |



Further documents are listed in the continuation of Box C.



See patent family annex.

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Korean Intellectual Property Office  
189 Cheongsa-ro, Seo-gu, Daejeon Metropolitan  
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

KIM Tae Hoon

Telephone No. 82-42-481-5728



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2011/065091**

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)                           | Publication<br>date                    |
|-------------------------------------------|---------------------|------------------------------------------------------|----------------------------------------|
| US 2001-0043729 A1                        | 22.11.2001          | US 2004-0247166 A1<br>US 6901156 B2<br>US 7184582 B2 | 09.12.2004<br>31.05.2005<br>27.02.2007 |
| US 2009-0324049 A1                        | 31.12.2009          | None                                                 |                                        |
| US 2008-0159613 A1                        | 03.07.2008          | US 7903861 B2<br>WO 2008-088478 A1                   | 08.03.2011<br>24.07.2008               |
| US 2007-0025503 A1                        | 01.02.2007          | DE 102006034374 A1<br>US 7489760 B2                  | 01.02.2007<br>10.02.2009               |