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45

712

2가 98 5 4

2가 101-310

(72)

2가 98 5 4

2가 101-310

(74)

:

(54)

가

(image retrieval)
(contrast) (brightness)
(DB)

1

, , , , , (contrast), (brightness), (sensitivity), ,

1
2 1
3 2
4 2
5a~5d

(, ' ')
(feature parameter)(, ' ')
(region of interest: ROI) (texture)
(shape)
(co-occurrence)
(contrast) (brightness)
/
가
/
가
(brightness)
(size), (translation), (rotation)
가 (rotation)
/
가 DB DB

1
[101]
5a (51)
[103] (ROI)
(ROI)
(ROI) 10%
5b ROI (53)
[105] 1
1 (texture) 가

$$\left(\begin{array}{c} \frac{Var(B)}{Var(A)+Var(B)} \\ \frac{Var(C)}{Var(A)+Var(C)} \\ \frac{Var(C)}{Var(C)+Var(D)} \\ \frac{Var(B)}{Var(B)+Var(D)} \\ \frac{Var(C)}{Var(B)+Var(C)} \\ \frac{Var(B)+Var(C)}{Var(A)+Var(D)} \\ \frac{\text{종단면길이}}{\text{횡단면길이}} \end{array} \right)$$

1

-
- 1) 5×5
- 2) 가 $\frac{1}{2}$
- 3) (Log $\frac{3 \times 3}{3 \times 3}$)
- 4) 5×5 (closing operation)
- 5) 3×3 $\frac{3 \times 3}{3 \times 3}$, 3×3
- 6) 3×3 $\frac{3 \times 3}{3 \times 3}$
- 7) 2 ().
-
- 3 가 4 4
- (variance) (Var(A), Var(B), Var(C), Var(D))
-

$$\frac{Var(B)}{Var(A)+Var(B)}, \frac{Var(C)}{Var(A)+Var(C)}, \frac{Var(C)}{Var(C)+Var(D)},$$

$$\frac{Var(B)}{Var(B)+Var(D)}, \frac{Var(C)}{Var(B)+Var(C)}, \frac{Var(B)+Var(C)}{Var(A)+Var(D)}$$

- ROI / 1

[105'] 2

2

(shape)

가

,

$$\left(\begin{array}{c} \Phi_1 \\ \Phi_2 \\ \Phi_3 \\ \Phi_4 \\ \Phi_5 \\ \Phi_6 \\ \Phi_7 \\ \frac{\text{종단면길이}}{\text{횡단면길이}} \end{array} \right)$$

, $\Phi_1, \dots, \Phi_7$

(Hu moment)

,

$$\Phi_1 = \eta_{20} + \eta_{02}$$

$$\Phi_2 = (\eta_{20} - \eta_{02})^2 + 4\eta_{11}^2$$

$$\Phi_3 = (\eta_{30} - 3\eta_{12})^2 + (3\eta_{21} - \eta_{03})^2$$

$$\Phi_4 = (\eta_{30} + \eta_{12})^2 + (\eta_{21} + \eta_{03})^2$$

$$\Phi_5 = (\eta_{30} - 3\eta_{12})(\eta_{30} + \eta_{12})[(\eta_{30} + \eta_{12})^2 - 3(\eta_{21} + \eta_{03})^2] \\ + (3\eta_{21} - \eta_{03})(\eta_{21} + \eta_{03})[3(\eta_{30} + \eta_{12})^2 - (\eta_{21} + \eta_{03})^2]$$

$$\Phi_6 = (\eta_{20} - \eta_{02})[(\eta_{30} + \eta_{12})^2 - (\eta_{21} + \eta_{03})^2] + 4\eta_{11}(\eta_{30} + \eta_{12})(\eta_{21} + \eta_{03})$$

$$\Phi_7 = (3\eta_{21} - \eta_{30})(\eta_{30} + \eta_{12})[(\eta_{30} + \eta_{12})^2 - 3(\eta_{21} + \eta_{03})^2] \\ + (3\eta_{12} - \eta_{03})(\eta_{21} + \eta_{03})[3(\eta_{30} + \eta_{12})^2 - (\eta_{21} + \eta_{03})^2]$$

$$\mu_{pq} = \frac{\mu_{pq}}{r}, \quad \mu_{pq} = \sum_x \sum_y (x - \bar{x})^p (y - \bar{y})^q f(x, y), \quad r = \frac{p+q}{2} + 1$$

f(x,y) 가 x, y

2

-
- (size), (translation) (Ostu) (rotation) 7 (Hu moment)
- 7 ROI / 2
[107] 1

1 DB ROI
, (distance measure) (similarity) 1 1
DB() 1 DB()
- 가 ROI
- 가 ROI
1 DB() 1 DB() , /
[105] 1
DB i 1 [x_{1i} x_{2i} x_{3i} x_{4i} x_{5i} x_{6i} x_{7i}]' , 1

$$i\text{번째 유사도} = \frac{1}{\sqrt{\sum_{j=1}^7 (F1_j - x_{ji})^2}}$$

$$\begin{pmatrix} F1_1 \\ F1_2 \\ F1_3 \\ F1_4 \\ F1_5 \\ F1_6 \\ F1_7 \end{pmatrix} = \begin{pmatrix} \frac{Var(B)}{Var(A)+Var(B)} \\ \frac{Var(C)}{Var(A)+Var(C)} \\ \frac{Var(C)}{Var(C)+Var(D)} \\ \frac{Var(B)}{Var(B)+Var(D)} \\ \frac{Var(C)}{Var(B)+Var(C)} \\ \frac{Var(B)+Var(C)}{Var(A)+Var(D)} \\ \frac{\text{중단면길이}}{\text{횡단면길이}} \end{pmatrix}$$

, DB , 가 가 /

5c 1 ROI DB
2 2 ROI (55) 가 (1~7)
2 ROI (55) 가 (1~7)
[107'] 2 DB ROI
2 2 DB ROI
- 2 2 DB() 2 D
B()

가
가
2 DB() 2 DB() , 1 DB 가 , /
2 [105'] 2

$$\text{DB}_i = 1 \quad [y_{1i} \ y_{2i} \ y_{3i} \ y_{4i} \ y_{5i} \ y_{6i} \ y_{7i} \ y_{8i}]', \quad 2$$

$$i\text{번째 유사도} = \frac{1}{\sqrt{\sum_{j=1}^8 (F2_j - y_{ji})^2}}$$

$$\begin{pmatrix} F2_1 \\ F2_2 \\ F2_3 \\ F2_4 \\ F2_5 \\ F2_6 \\ F2_7 \\ F2_8 \end{pmatrix} = \begin{pmatrix} \Phi_1 \\ \Phi_2 \\ \Phi_3 \\ \Phi_4 \\ \Phi_5 \\ \Phi_6 \\ \Phi_7 \\ \frac{\text{종단면길이}}{\text{횡단면길이}} \end{pmatrix}$$

DB DB , 가 가 /

5d 2 ROI DB 가 (1~7) ,
 . 2 ROI (55) 가 (1~7) ,
 2 ROI (55) 가 (1~7) .

가 , , (contrast) (brightness)
(DB) ,

(sensitivity)

(57)

1.

$$\frac{\frac{\frac{\frac{\frac{\frac{Var(B)}{Var(A)+Var(B)}}{Var(C)}}{Var(A)+Var(C)}}{Var(C)}}{Var(C)+Var(D)}}{Var(B)}}{Var(B)+Var(D)}}{\frac{Var(C)}{Var(B)+Var(C)}} \cdot \frac{Var(B)+Var(C)}{Var(A)+Var(D)}$$

(ROI) $\frac{1}{\text{ROI}}$, (texture) $\frac{1}{\text{texture}}$

$$\begin{pmatrix} \Phi_1 \\ \Phi_2 \\ \Phi_3 \\ \Phi_4 \\ \Phi_5 \\ \Phi_6 \\ \Phi_7 \\ \frac{\text{종단면길이}}{\text{횡단면길이}} \end{pmatrix}$$

(shape) (distance measure) (similarity)

DB() 1 DB() ; 가 ROI 1 , 1 , 2 DB

가 ROI 가 ROI , 2 ;

2.

1 , 1 , ,

가 4 4 (var

iance) (Var(A), Var(B), Var(C), Var(D)),

$$\frac{Var(B)}{Var(A)+Var(B)} \quad \circ$$

$$\frac{Var(C)}{Var(A)+Var(C)} \quad \circ$$

$$\frac{Var(C)}{Var(C)+Var(D)} \quad \circ$$

$$\frac{Var(B)}{Var(B)+Var(D)} \quad \circ$$

$$\frac{Var(C)}{Var(B)+Var(C)} \quad \circ$$

$$\frac{Var(B)+Var(C)}{Var(A)+Var(D)}$$

ROI / 1 DB() , ROI D

B , [105] 1 DB() ,

3.

2 ,

1) 5×5

2) 가 1/2 ,

3) (Log 3×3) ,

4) 5×5 (closing operation) ,

5) 3×3 3×3 , 3×3

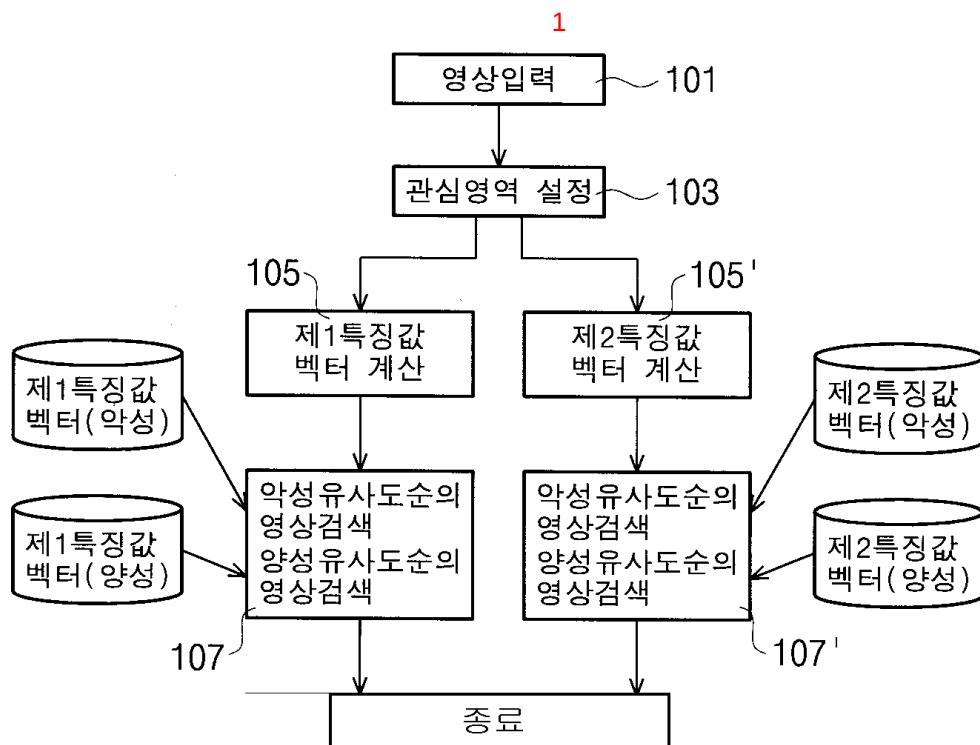
6) 3×3 3×3 ,

7) 2 () ,

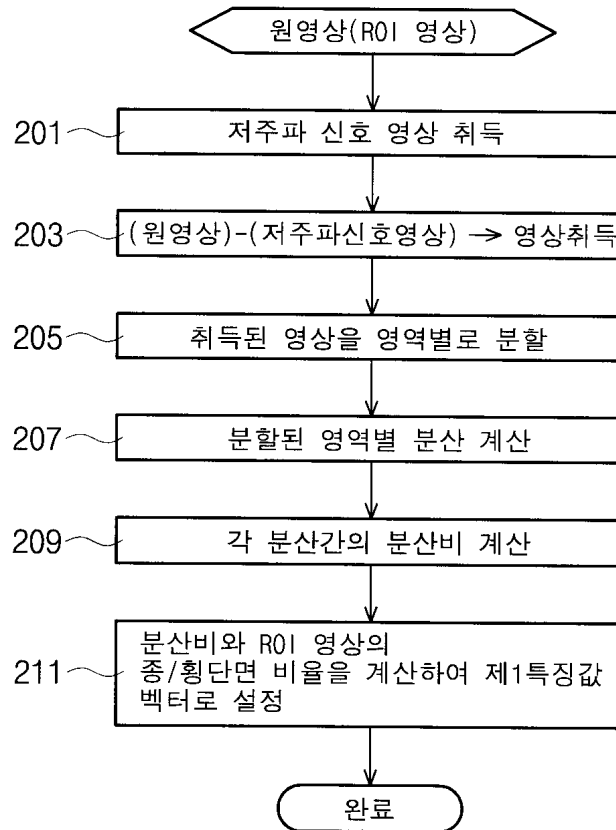
4.

1 , 2 ,

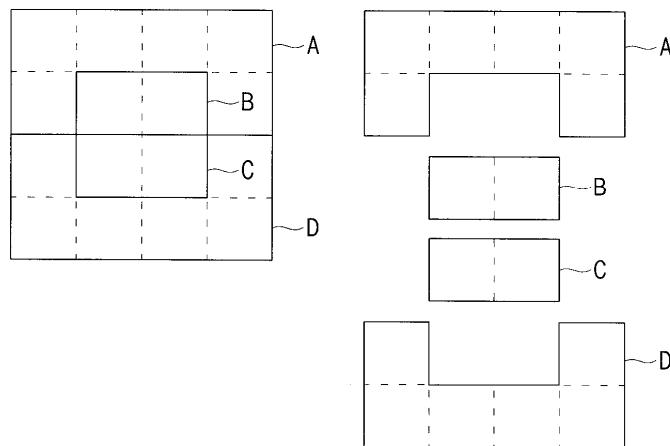
	(size),	(translation),	(rotation)	7	(Hu moment)	
7		ROI	/	2		
	2	DB()	2	DB()		ROI D
B	2					

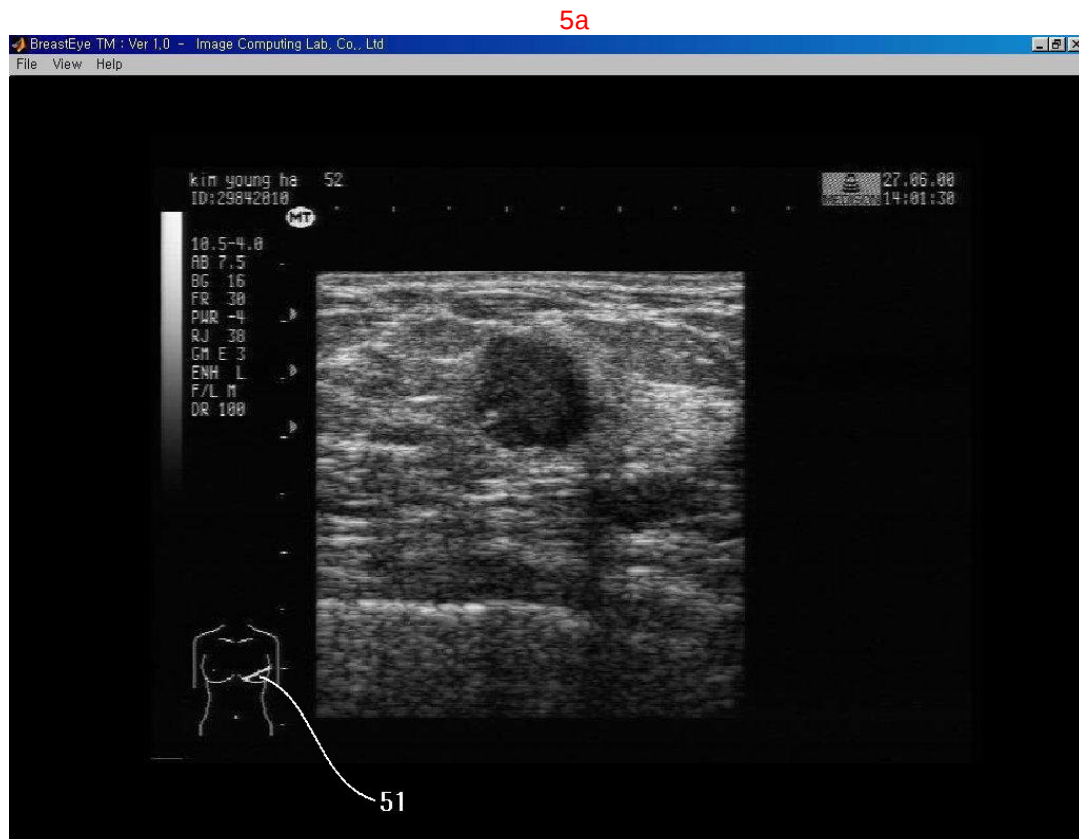
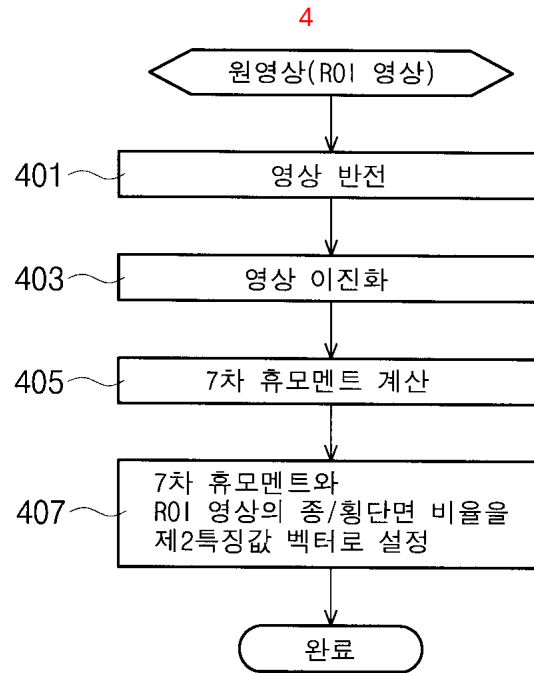


2

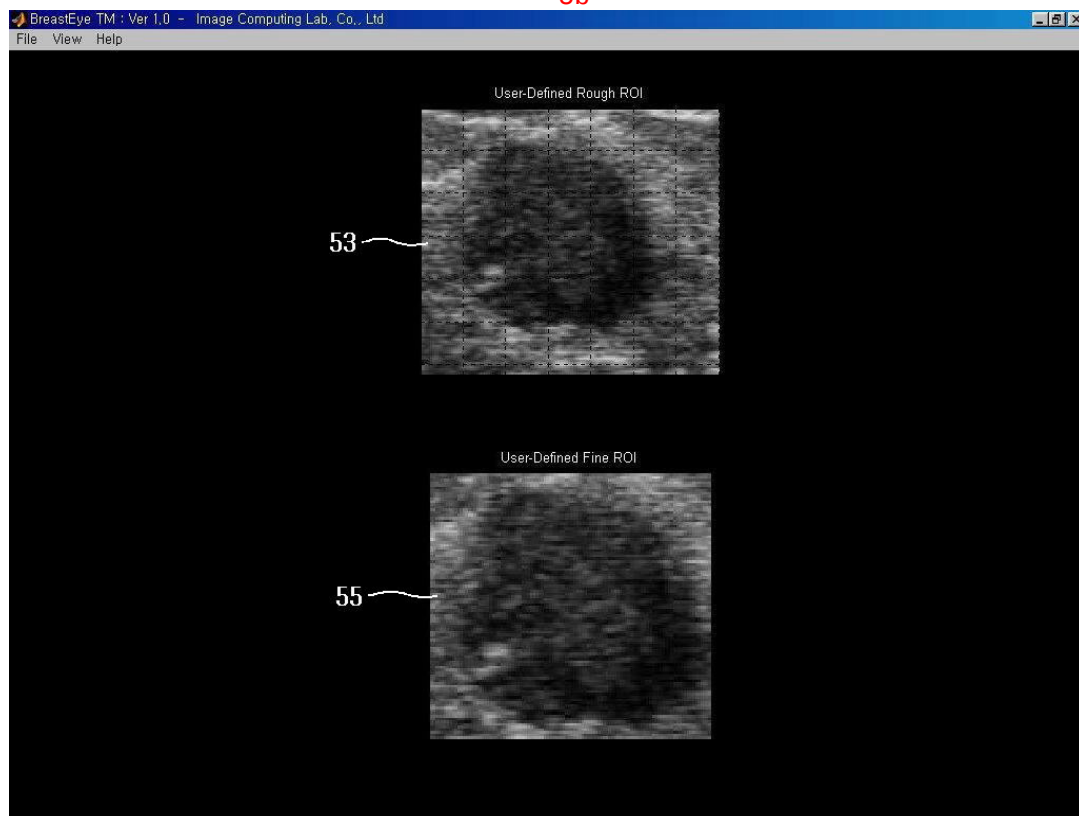


3

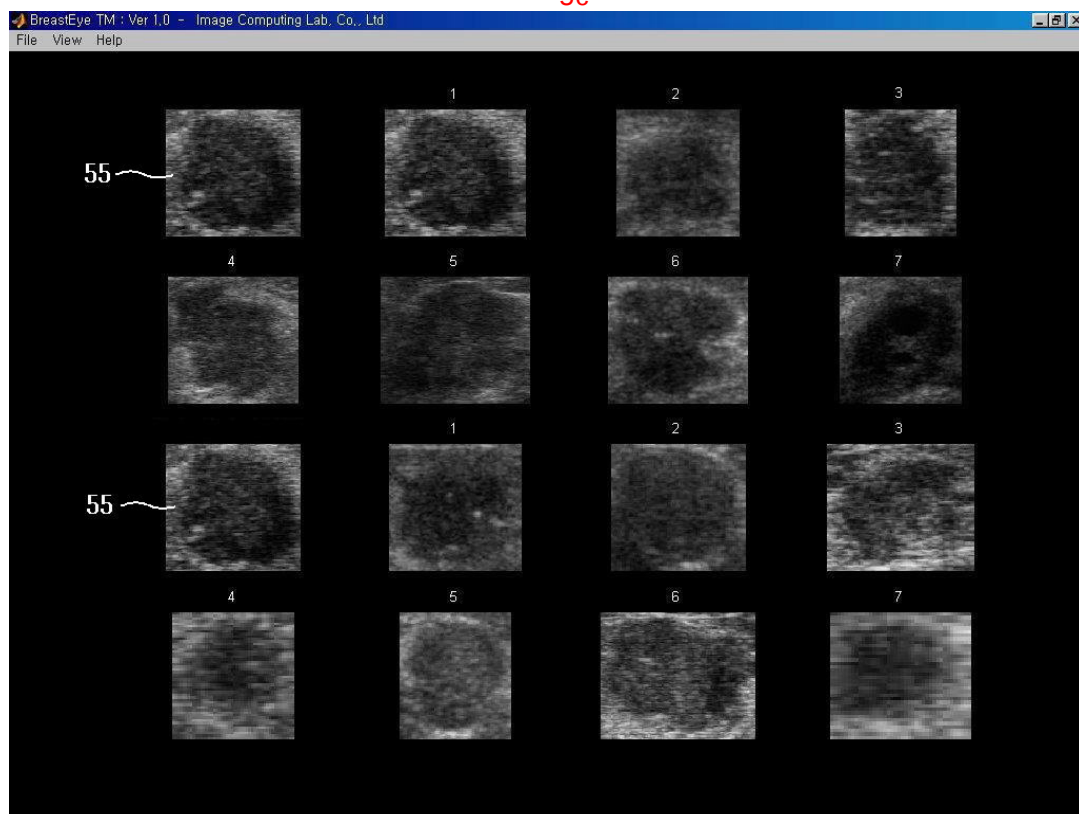




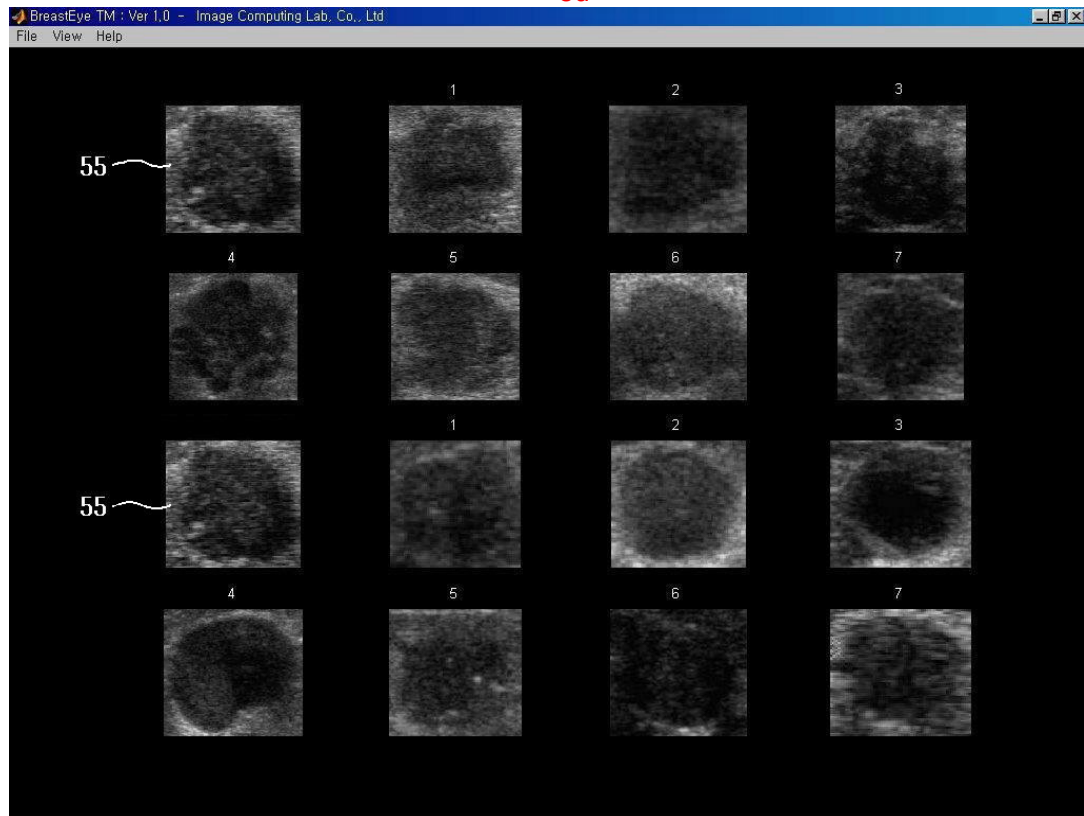
5b



5c



5d



专利名称(译)	一种独立于强度和亮度变化搜索超声质量图像的方法		
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IPC分类号	A61B8/00		
CPC分类号	A61B8/0825 A61B8/5223		
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其他公开文献	KR1020030070324A		
外部链接	Espacenet		

摘要(译)

本发明涉及一种用于自动执行超声乳房质量图像的图像检索的方法。由于本发明的特征值方法的特征在于不会极大地影响超声设备的对比度和亮度，因此特征值方法可以应用于在各种超声设备环境中获得的图像数据库 (DB)。通过执行通过本发明的方法自动执行的图像搜索，自动检测和显示类似的恶性和良性图像。1 指数方面 超声设备，对比度，亮度，灵敏度，恶性，良性，质量，质量，质量，质量

