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(72) Inventors:  
• **KWON, Yong Joo**  
**Yongin-si, Gyeonggi-do (KR)**  
• **KANG, Jae Min**  
**Gangseo-gu, Seoul (KR)**  
• **PARK, Sang Yun**  
**Hwaseong-si, Gyeonggi-do (KR)**  
• **KIM, Youn Ho**  
**Hwaseong-si, Gyeonggi-do (KR)**

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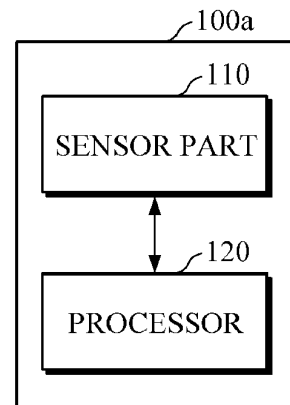
(71) Applicant: **Samsung Electronics Co., Ltd.**  
**Gyeonggi-do 16677 (KR)**

(74) Representative: **Grünecker Patent- und Rechtsanwälte**  
**PartG mbB**  
**Leopoldstraße 4**  
**80802 München (DE)**

(54) **APPARATUS AND METHOD FOR ESTIMATING BIO-INFORMATION**

(57) Disclosed is an apparatus for estimating bio-information. The apparatus for estimating bio-information includes: a sensor part comprising a pulse wave sensor array configured to detect a pulse wave signal when an object contacts a contact surface of the sensor part, and a load sensor configured to detect a first contact load applied by the object to the contact surface; and a processor configured to obtain contact load distribution of the contact surface based on the pulse wave signal, and to estimate bio-information based on the contact load distribution.

**FIG. 1A**



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EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 2018/177413 A1 (KWON YONG JOO [KR] ET AL) 28 June 2018 (2018-06-28) * paragraphs [0002], [0007] - [0009], [0054], [0066], [0068], [0069], [0074], [0081], [0104], [0105], [0110] - [0113], [0141] - [0145]; figures 1,3,20 *	1-15	INV. A61B5/00 A61B5/021 A61B5/022 A61B5/026 A61B5/1172
A	----- WO 2017/188092 A1 (OMRON HEALTHCARE CO LTD [JP]) 2 November 2017 (2017-11-02) * figures 2,3 * & US 2019/046050 A1 (KATO YUKI [JP] ET AL) 14 February 2019 (2019-02-14) * paragraphs [0019], [0051] * -----	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			A61B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 7 May 2020	Examiner Lommel, André
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document			

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**CLAIMS INCURRING FEES**

The present European patent application comprised at the time of filing claims for which payment was due.

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Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

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No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

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**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

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see sheet B

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All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

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As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

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Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

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None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

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The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION  
SHEET B**

Application Number  
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

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1. claims: 1-11

An apparatus for estimating bio-information, wherein the processor is configured to obtain contact load distribution of the contact surface based on the pulse wave signal

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2. claims: 12-15

A method for estimating bio-information, wherein a calibration model based on a reference pulse wave signal is used.

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ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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07-05-2020

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WO 2017188092 A1	02-11-2017	CN 109069036 A	21-12-2018
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专利名称(译)	估计生物信息的装置和方法		
公开(公告)号	<a href="#">EP3626163A3</a>	公开(公告)日	2020-06-17
申请号	EP2019187752	申请日	2019-07-23
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
当前申请(专利权)人(译)	SAMSUNG ELECTRONICS CO. , LTD.		
[标]发明人	KWON YONG JOO KANG JAE MIN PARK SANG YUN KIM YOUN HO		
发明人	KWON, YONG JOO KANG, JAE MIN PARK, SANG YUN KIM, YOUN HO		
IPC分类号	A61B5/00 A61B5/021 A61B5/022 A61B5/026 A61B5/1172		
CPC分类号	A61B5/02007 A61B5/02108 A61B5/441 A61B5/0053 A61B5/022 A61B5/0261 A61B5/1172 A61B5/6843 A61B2562/0247 A61B2562/0252 A61B5/0205 A61B5/021 A61B5/02433 A61B5/165 A61B5/442 A61B5/681 A61B5/6898 A61B5/7278 A61B2560/0223 A61B2562/0238 A61B2562/12		
优先权	1020180114185 2018-09-21 KR		
其他公开文献	EP3626163A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

公开了一种用于估计生物信息的设备。用于估计生物信息的设备包括：传感器部分，包括：脉搏波传感器阵列，配置为当物体接触传感器部分的接触表面时检测脉搏波信号；以及负载传感器，配置为检测由物体施加的第一接触负载。物体到接触表面；处理器，被配置为基于所述脉搏波信号获得所述接触表面的接触负荷分布，并基于所述接触负荷分布来估计生物信息。

FIG. 1A

