



New connection on: : 04-07-2018 : 22:51:39 - Last disconnection on: : 04-07-2018 : 22:19:23

V 4.0.0.44358(LP,U,linux) (Rev:43856 2017-04-27 09:03:29 +0200#(D201802)) (RPM D201802)

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[EPODOC: SS 14] diaper and impedance

Results in EPODOC 23

[SS 15] ..v

[EPODOC: SS 15] ..li



1/23 © EPODOC / EPO

PN - [CN106264876](#) A 20170104

PR - CN20161837660 20160921

AP - CN20161837660 20160921

DT - I

CNOI - [A61F13/496](#) ; [A61F13/505](#) ; [A61F13/84](#) ; [A61B5/01](#) ; [A61B5/053](#) ; [A61F13/42](#)

CNOA - [A61F2013/424](#) ; [A61F2013/8473](#)

PA - MECH & ELECTRICAL ENG ANHUI POLYTECHNIC UNIV

TI - Intelligent baby **diaper**

AB - The invention discloses an intelligent baby **diaper**. The intelligent baby **diaper** comprises a master control chip, a temperature and humidity sensor, a bio-**impedance** sensor, a sound sensor and a warning device which are installed on the baby **diaper**. The temperature and humidity sensor, the bio-**impedance** sensor, the sound sensor and the warning device are connected with the master control chip. The master control chip, the bio-**impedance** sensor and the sound sensor are disposed on the trousers waist position on the front side of the baby **diaper**, and the temperature and humidity sensor is arranged on the position, close to the bottom, of the baby **diaper**. The warning device is a colorful LED lamp. The baby **diaper** further comprises a Bluetooth transmission device installed on the trousers waist position on the front side of the baby **diaper**. All the sensors and the master control chip of the baby **diaper** are highly integrated, small in size, low in power consumption and radiation, soft, skin-friendly and free of irritation, and have no harm to skin of babies. Meanwhile, by means of SMD design, the baby **diaper** can be combined with a traditional baby **diaper** in use and can be washed by water and used repeatedly.

2/23 © EPODOC / EPO

PN - [CN106137145](#) A 20161123

PR - CN20161648888 20160809

AP - CN20161648888 20160809

DT - I

CNOI - [A61B5/746](#) ; [A61B5/0008](#) ; [A61B5/01](#) ; [A61B5/6802](#) ; [A61B5/6808](#) ; [A61F13/42](#) ; [A61B5/7271](#)

CNOA - [A61B2503/04](#) ; [A61B2503/06](#) ; [A61F2013/424](#)

PA - XI'AN GREEN FIELD MEDICAL TECH CO LTD

TI - Intelligent wireless body temperature and excretion event detecting sensor

AB - The invention discloses an intelligent wireless body temperature and excretion event detecting sensor and belongs to medical and domestic fields. The intelligent sensor has functions of body temperature measurement, excretion event detection, body temperature monitoring and body temperature recording, and comprises a separable sensor cable, a body temperature and excreta **impedance** measurement main body module and a related APP, wherein the main body module realizes temperature and **impedance** signal processing by high precision and low power consumption devices such as a voltage reference device, an instrument amplifier and the like and completes digital signal processing algorithm and wireless signal transmission by a mixed-function single-chip microcomputer; the voltage of a temperature and excreta measuring unit and the voltage of a storage unit are directly provided by the single-chip microcomputer; a rechargeable battery is charged through a mobile phone USB cable. A separated sensor cable probe can be used for measuring the body temperature and can also be placed in a **diaper** for detecting urination and defecation frequencies and time through detection of excreta temperature and **impedance** changes. The APP and sensor communication protocol support a variety of ways, and information of one or more sensors can be displayed and managed.

3/23 © EPODOC / EPO

PN - [JP2016049401](#) A 20160411

PR - JP20140178051 20140902

AP - JP20140178051 20140902

DT - I

CT - || STSE (A)
[JP4830129B](#) B2 20111207 [];
[JP2011067620](#) A 20110407 [Y] (UNIV OSAKA, et al)
[Y] 1-3,5
* Paragraph0022 *;
[WO2006134940](#) A1 20061221 [Y] (SUPER FAITHS INC [JP], et al)
[Y] 1-3,5
* Paragraphs0044,0048,0061, Figures3-5 *;
[JP2013534839](#) A 20130909 [Y]
[Y] 1-3,5
* Paragraphs0002,0011,0020,0025,0067, Figure1 *;
[WO2013023054](#) A2 20130214 [] (3M INNOVATIVE PROPERTIES CO [US]);
[JP2014529732](#) A 20141113 [Y]
[Y] 1-3,5
* Paragraphs0035,0100, Figures3,14 *;
[JPH11216154](#) A 19990810 [A] (SANWA NEW TEC KK)
[A] -
* Whole Document *;
[JP2001161732](#) A 20010619 [A] (MATSUSHITA ELECTRIC WORKS LTD)
[A] -
* Whole Document *;

[JP2001325352](#) A 20011122 [A] (MATSUSHITA ELECTRIC IND CO LTD)

[A] -

* Whole Document *;

[JP2005000602](#) A 20050106 [A] (TAKADA YUKIHIKO)

[A] -

* Whole Document *

FI - A61F5/44&S
FT - 4C098/AA09; 4C098/CD08; 4C098/CD09; 4C098/CE06
PA - SYSTEMJAPAN:KK
TI - URINATION DETECTION SYSTEM
AB - PROBLEM TO BE SOLVED: To provide a system that achieves urination detection of a **diaper** wearer in response to the presence of urine by using a passive urine sensor with an IC tag structure. SOLUTION: A urination detection system includes: a urine sensor 3 which is attached to a **diaper** of a wearer, comprises a urine detection part having a predetermined **impedance** in a normal state, is an electromagnetic induction type as well as a passive type, and uses an IC tag storing individual information; a film-like antenna 6 which is attached to a sheet on a bed and is coupled with the urine sensor 3 through electromagnetic induction; a management computer 8 for performing urination monitoring including the individual information of the wearer, and data distribution to a portable information terminal 9 which a care-giver possesses; and a transmission/reception controller 7 for supplying power to the film-like antenna 6, and performing data transmission with the management computer 8 that couples the film-like antenna 6 and the urine sensor 3 through electromagnetic induction. A urination detection announcement is performed from the management computer 8 to the portable information terminal 9 by using an **impedance** change of the urine detection part due to the presence of urine. SELECTED DRAWING: Figure 1

4/23 © EPODOC / EPO

PN - [JP2016047480](#) A 20160407

PR - JP20160004204 20160113

AP - JP20160004204 20160113

DT - I

CT - || STSE (A)

[JP2002224093](#) A 20020813 [] (KAO CORP);

[JP2011078791](#) A 20110421 [] (KAO CORP);

[JP2002073805](#) A 20020312 [] (KAO CORP);

[JP2013509280](#) A 20130314 [];

[JP2014507182](#) A 20140327 []

FI - A41B13/02&L; A61F13/42&F

FT - 3B200/AA01; 3B200/CA08; 3B200/CA11; 3B200/DF04; 3B200/DF05

PA - KAO CORP

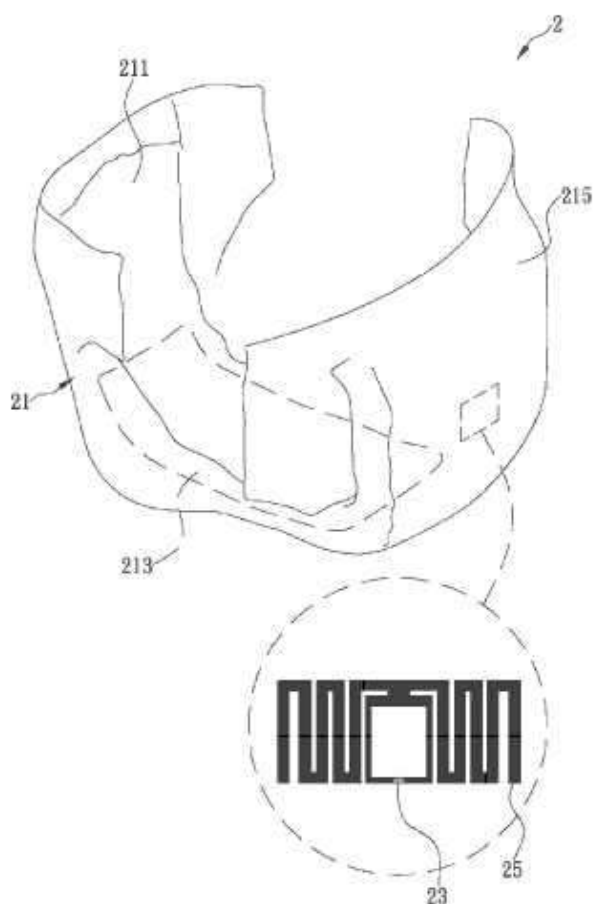
TI - URINATION DETECTING DEVICE

AB - PROBLEM TO BE SOLVED: To provide a urination detecting device for highly accurately measuring urination speed to an absorbent article such as a **diaper** and a urination collecting pad. SOLUTION: An electrostatic capacity sensor sheet 1 has a film 1a and a plurality of electrodes 1b formed in one surface of the film 1a. A plurality of sensor elements are constituted by connecting each of the electrodes 1b by leads and having electrode rows arranged in a plurality of rows. The electrode distance in the row direction in the electrode rows is in the range of 20 to 55 mm, the

electrodes has a shape present in a rectangular shape from 15 to 25 mm. Such an electrostatic capacity sensor sheet 1 is attached to the outside surface of the absorbent article. The absorbent part of the absorbent article has a polymer quantity capable of absorbing urine of a centrifugal holding quantity of at least 350 g. The electrostatic capacity sensor sheet 1 detects **impedance** change between the electrodes by each of the sensor elements and detects the urination in the absorbent article such as the urine collecting pad. SELECTED DRAWING: Figure 1

5/23 © EPODOC / EPO

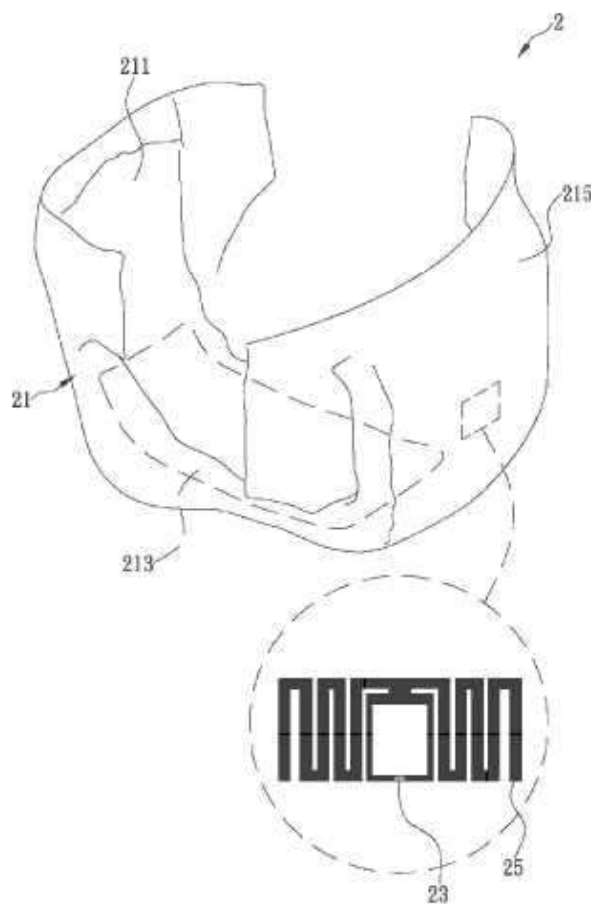
- PN - [KR20150031404](#) A 20150324
- PR - TW20130133347 20130914
- AP - KR20140120869 20140912
- DT - I
- CCI - [A61F13/42](#)
- CNOI - [A61F13/49](#) ; [A61F13/42](#) ; [G08B21/20](#) ; [G08B21/0438](#)
- CCA - [A61F2013/424](#)
- PA - SINGLI TECHNOLOGY INC [TW]
- TI - **DIAPER** STRUCTURE CAPABLE OF WIRELESSLY DETECTING A SOAKING WET CONDITION THEREOF AND **DIAPER** DETECTION SYSTEM OF THE SAME
- AB - The present invention provides a **diaper** structure including: a **diaper** body sequentially forming a fabric layer, a leakage prevention layer, and an absorptive material layer from the inside to the inside; a communication chip attached on an outer surface of the leakage prevention layer, connected each other, and forming RFID tags; and a metal antenna. Accordingly, the absorptive material layer absorbs passing urine. Also, change of relative dielectric constant of the leakage prevention layer causes change of an **impedance** value of the metal antenna when an inner surface of the leakage prevention layer is in contact with urine on the surface of the absorptive material layer. As a result, change of the wavelength of



electromagnetic signal
transmitted by the RFID tags
is caused so that wet
condition of a **diaper** can be
rapidly detected.

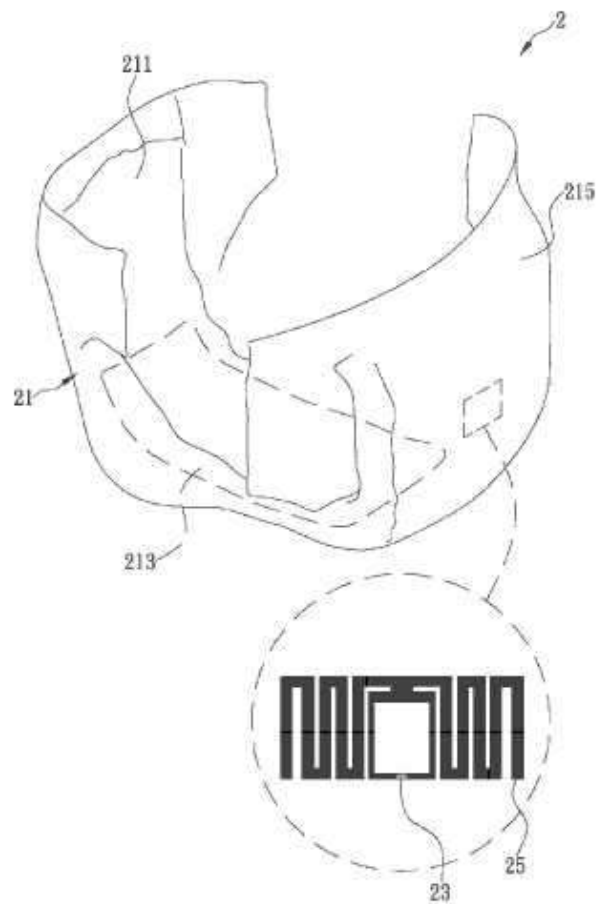
6/23 © EPODOC / EPO

PN - [CN104434405](#) A 20150325
PR - TW20130133347 20130914
AP - CN20141267690 20140616
DT - I
CT - || STSE (A)
[CN1808470](#) A 20060726
[A] (SHANGHAI ZHONGCE IND
CO LTD [CN])
[A] 1-5
* 全文 *;
[CN101196530](#) A 20080611
[A] (SHANGHAI ZHONGCE
TRADE CO LTD [CN])
[A] 1-5
* 全文 *;
[JP2011235079](#) A 20111124
[A] (FUKUSHIMA YUKIHIRO)
[A] 1-5
* 全文 *;
[CN202285125U](#) U 20120627
[A] (UNIV BEIJING WUZI)
[A] 1-5
* 全文 *;
[CN103116802](#) A 20130522
[X] (IND TECH RES INST)
[X] 1-5
* 权利要求1,10, 说明书第86-
91段, 图1, 4A, 6B *
CCI - [A61F13/42](#)
CNOI - [A61F13/49426](#) ; [A61F13/42](#)
CCA - [A61F2013/424](#)
CNOA - [A61F2013/424](#)
PA - SINGLI TECHNOLOGY INC
TI - **Diaper** structure capable of
wirelessly detecting a soaking
wet condition thereof
and **diaper** detection system
of the same
AB - The present invention
provides a **diaper** structure
capable of wirelessly
detecting a soaking wet
condition thereof and



a **diaper** detection system of the same. The **diaper** detection system includes a **diaper** main body, a communication chip, a metal antenna and a signal reader. The communication chip and the metal antenna are attached to the outer side of the **diaper** main body and are connected to each other, thereby forming an RFID tag. When **diaper** main body is soaking wet, the change in the permittivity of the **diaper** main body causes a change in the **impedance** value of the metal antenna and consequently a change in the wavelength of the electromagnetic wave signal transmitted by the RFID tag. The signal reader can emit a detecting electromagnetic wave to the RFID tag. Once the RFID tag receives the detecting electromagnetic wave, a response electromagnetic wave will be transmitted, and the signal reader determines whether the **diaper** main body is soaking wet according to the wavelength of the response electromagnetic wave. Therefore, a carer can replace the **diaper** with a new one immediately, and is prevented from the heavy work of taking off the **diaper** of a user, checking whether the **diaper** is wet and putting the **diaper** back.

PN - [US2015080819](#) A1 20150319
 PR - TW20130133347 20130914
 AP - US201314098851 20131206
 DT - *; Rep
 CT - || R141 (A1)
 [US2006174693](#) A1 [];
 [US2010072271](#) A1 [];
 [US2013041334](#) A1 [];
 [US2016008182](#) A1 []
 CCI - [A61F13/42](#)
 CCA - [A61F2013/424](#)
 PA - SINGLI TECHNOLOGY INC [TW]
 TI - **DIAPER**STRUCTURECAPABLE
 OF WIRELESSLY DETECTING A
 SOAKING WET CONDITION
 THEREOF AND**DIAPER**
 DETECTION SYSTEM OF THE
 SAME
 AB - The present invention is to
 provide a **diaper** structure,
 which includes a **diaper** main
 body formed by a fabric layer,
 an anti-leak layer and an
 absorbent material layer
 sequentially from the inner
 side to outer side thereof, and
 a communication chip and a
 metal antenna attached to the
 outer surface of the anti-leak
 layer and connected with
 each other to form an RFID
 tag. Thus, when the absorbent
 material layer absorbs the
 urine passing through the
 fabric layer and the inner
 surface of the anti-leak layer
 is in contact with the urine on
 the surface of the absorbent
 material layer, the change in
 the relative permittivity of the
 anti-leak layer causes a
 change in the **impedance**
 value of the metal antenna
 and consequently a change in
 the wavelength of the
 electromagnetic wave signal
 transmitted by the RFID tag,
 thereby enabling rapid
 detection of a soaking wet
 condition of the **diaper**.

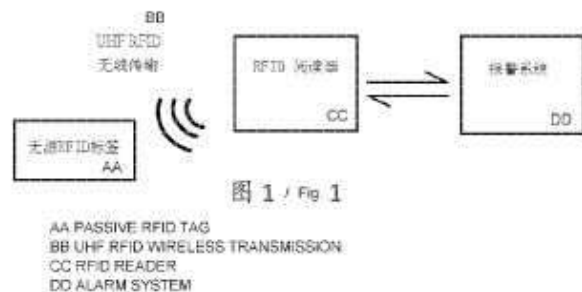


8/23 © EPODOC / EPO

- PN - [CN203539549U](#) U 20140416
- PR - CN20132626745U 20131011
- AP - CN20132626745U 20131011
- DT - I
- PA - XIAO GANG
- TI - Pre-warning **diaper**
- AB - The utility model provides a pre-warning **diaper** and belongs to the field of daily necessities. The pre-warning **diaper** comprises a body, a sensor, a processor and an alarming device, wherein the sensor, the processor and the alarming device are positioned in the body and are used for detecting the change of **impedance** of the body; the processor is electrically connected with the sensor and the alarming device respectively. When a baby or a paralytic patient urinates or defecates, the body of the pre-warning **diaper** is wetted by urine or excrement, so that the **impedance** of the body is reduced; the sensor can timely detect the change of the **impedance** of the body and send obtained **impedance** change information to the processor; the processor sends an obtained alarming signal to the alarming device according to the **impedance** change information; the alarming device sends out an alarming prompt after receiving the alarming signal, so that a nurse can know the urination or defecation situation of the baby or the paralytic patient and replace the pre-warning **diaper** in time; therefore, the phenomenon that the urine or the excrement which is urinated or defecated by the baby or the paralytic patient is attached to the surface of the skin for a long time can be greatly avoided.

9/23 © EPODOC / EPO

- PN - [WO2013189284](#) A1 20131227
- PR - CN20121200472 20120618
- AP - WO2013CN77410 20130618
- DT - *; Rep
- CT - [CN] | ISR (A1)
[CN102324171](#) A 20120118
 [X] (ZHUOYUEJIN TECHNOLOGY SHENZHEN CO LTD);
[CN202257867U](#) U 20120530
 [X] (ZHUOYUEJIN TECHNOLOGY SHENZHEN CO LTD);
[CN101069668](#) A 20071114
 [Y] (ZHAO ZIFU [CN]);
[CN102722966](#) A 20121010
 [XP] (ZHUOYUEJIN TECHNOLOGY SHENZHEN CO LTD);
[CN202711437U](#) U 20130130
 [XP] (ZHUOYUEJIN TECHNOLOGY SHENZHEN CO LTD);
[CN101320009](#) A 20081210
 [A] (IND TECH RES INST [CN]);
[JP2007085817](#) A 20070405
 [A] (WATANABE MASAHIRO)
- CCI - [G08B21/20](#)
- CUI - [A61F13/49](#) ; [A61F13/42](#) ;



G06K7/00

- CCA - A61F2013/424
- PA - ADVANCE TECHNOLOGY LTD [CN]
- TI - WIRELESS WET **DIAPER** ALARM
AND CORRESPONDING
DISPOSABLE **DIAPER** PRODUCT OF
THE ALARM
- AB - Disclosed is a wireless
wet **diaper** alarm comprising a
passive RFID tag (2), an RFID
reader, and an alarm system,
with the RFID reader emitting a
signal to the passive RFID tag (2)
and reading the information
sent back from a
disposable **diaper** product (1),
wherein the RFID reader reads
and analyzes data, and when the
humidity is greater than a
certain limit, the RFID reader
triggers the alarm system. There
is/are N passive RFID tag(s) (2),
wherein N is a positive integer;
and the RFID reader is set to
read the passive RFID tag (2)
when the humidity is greater or
lower than a certain level. Also
provided is the
disposable **diaper** product (1)
comprising the above-mentioned
wireless wet **diaper** alarm. Since
the passive RFID tag (2) is added
to the disposable **diaper** product
(1), the passive RFID tag (2) will
be affected by the humidity of
the surrounding environment
and then a parameter, such
as **impedance** thereof, will
change, causing the data read by
the RFID reader to change, so it
is inferred that the wet **diaper**
state of the disposable **diaper**
product (1) is wet.

PN - [TW201322137](#) A 20130601

PNFP - TWI431534B B 20140321

PR - TW20110141919 20111116

AP - TW20110141919 20111116

DT - I

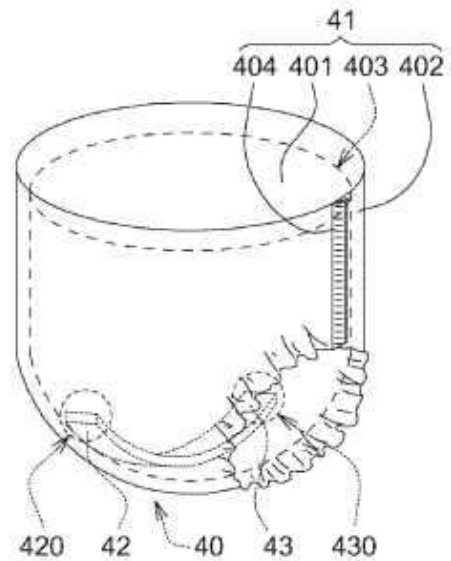
CCI - [H01Q1/2225](#) ; [H01Q1/273](#) ;
[H01Q9/285](#)

PA - (A B)
IND TECH RES INST [TW]

TI - (A B)
Radio frequency
identification tag and **diaper**,
absorber and sensing system
using the same

AB - (A)
A radio frequency (RF)
identification tag includes a
substrate, a planar antenna,
a RF chip, a plurality of signal
conductors and a plurality of
ground conductors. The RF
chip receives a RF signal from
the planar antenna to excite
the RF chip generating an
identification code. The
signal conductors are
coupled to the planar
antenna. The ground
conductors and the signal
conductors are disposed in
alternating sequence and
coplanarly disposed on the
substrate to form a coplanar
waveguide transmission line,
which includes an **impedance**
match portion and a
transmission portion
connected between
the **impedance** match portion
and the planar antenna.
The **impedance** match portion
has an input end and a
ground plane. The input end
is coupled to the signal
conductors. The ground plane
is coupled to the ground
conductor and the RF chip is
disposed between the input
end and the ground plane.

4a



PN - [CN103116802](#) A 20130522

PNFP - CN103116802B B 20160217

PR - TW20110141919 20111116

AP - CN20111430744 20111220

DT - I

CT - || STSE (A)
[CN201117797Y](#) Y 20080917
 [Y] (UNIV SOUTH CHINA TECH [CN])
 [Y]
[US4746925](#) A 19880524
 [A] (TORIYAMA HARUHIKO [JP])
 [A]
[US6774800](#) B2 20040810
 [Y] (FRIEDMAN MARK B [US], et al)
 [Y]
[CN101730856](#) A 20100609
 [A] (SCA HYGIENE PROD AB)
 [A]
[CN101281615](#) A 20081008
 [A] (HITACHI LTD [JP])
 [A]

CTNP - || STSE (A)
 [A] 白兴文,张亚君,
 "基于RFID天线阻抗自动匹配技术的研究", <<电子器件>>, (20100430), vol. 33, no. 2, PAGE 205 - 208
 [A]
 第205页至第208页

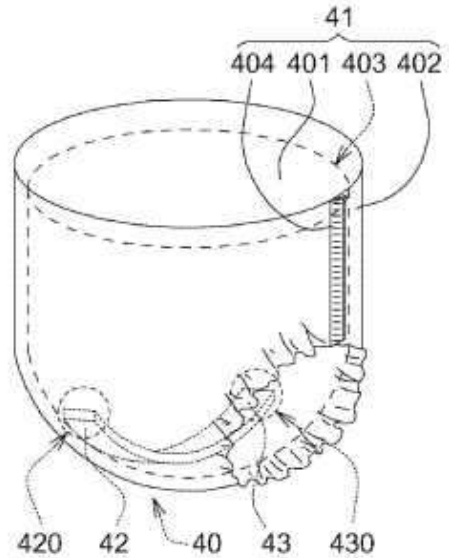
CCI - [H01Q1/2225](#) ; [H01Q1/273](#) ;
[H01Q9/285](#)

PA - (A)
 IND TECH RES INST

TI - (A)
 Radio frequency
 identification tag and **diaper**,
 absorber and sensing system
 using the same

AB - (A)
 A radio frequency (RF)
 identification tag including a
 substrate, a planar antenna,
 an RF chip, a plurality of
 signal conductors and a
 plurality of ground
 conductors is provided. The
 RF chip receives an RF signal
 from the planar antenna to

4a

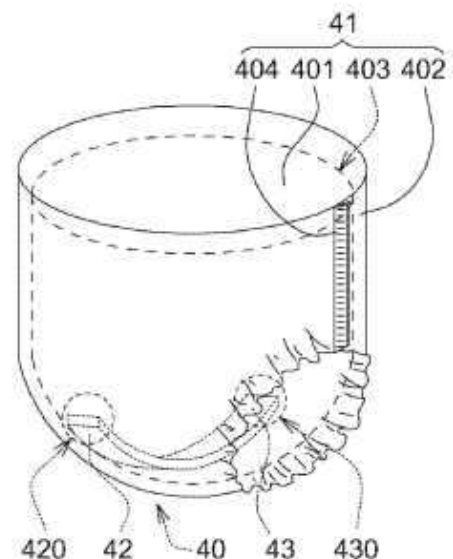


generate an identification code. The signal conductors are coupled to the planar antenna. The ground conductors, interlaced on two opposite sides of the signal conductors, and the signal conductors are adjacent to each other and disposed on the substrate to form a coplanar waveguide structure which includes an **impedance** match portion and a transmission portion.

The **impedance** match portion has an input end coupled to the signal conductors and a ground plane coupled to the ground conductors. The RF chip is disposed between the input end and the ground plane. The transmission portion is connected between the **impedance** match portion and the planar antenna.

- 12/23** © EPODOC / EPO
- PN - [US2013123726](#) A1 20130516
- PNFP - US9160054 B2 20151013
- PR - TW20110141919 20111116
- AP - US201213524192 20120615
- DT - *; Rep
- CT - || STSE (B2)
[US4746925](#) A 19880524 [] (TOYOTA MOTOR CO LTD [JP])
- CCI - [H01Q1/2225](#) ; [H01Q1/273](#) ; [H01Q9/285](#)
- PA - (A1 B2)
YU JIUN-JANG [TW]; CHEN CHIUNG-HSIUNG [TW]; LU CHUN-AN [TW]; LIN HONG-CHING [TW]; IND TECH RES INST [TW]
- TI - (A1 B2)
RADIO FREQUENCY IDENTIFICATION TAG AND **DIAPER**, ABSORBER AND SENSING SYSTEM USING THE

4a



SAME

AB - (A1 B2)

A radio frequency (RF) identification tag including a substrate, a planar antenna, an RF chip, a plurality of signal conductors and a plurality of ground conductors is provided. The RF chip receives an RF signal from the planar antenna to generate an identification code. The signal conductors are coupled to the planar antenna. The ground conductors, interlaced on two opposite sides of the signal conductors, and the signal conductors are adjacent to each other and disposed on the substrate to form a coplanar waveguide structure which includes an **impedance** match portion and a transmission portion. The **impedance** match portion has an input end coupled to the signal conductors and a ground plane coupled to the ground conductors. The RF chip is disposed between the input end and the ground plane. The transmission portion is connected between the **impedance** match portion and the planar antenna.

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PN - [JP2013039158](#) A 20130228

PR - JP20110176281 20110811

AP - JP20110176281 20110811

DT - I

CT - || STSE (A)
[JP2010172426](#) A 20100812 [] (ANESTY KOGYO KK)

FI - A41B13/02&L; A61F13/42&F

FT - 3B200/AA01; 3B200/CA02; 3B200/DF04; 3B200/DF05

PA - KAO CORP

TI - URINATION DETECTING DEVICE

AB - PROBLEM TO BE SOLVED: To provide a urination detecting device for highly accurately measuring urination quantity to an absorbent article such as a **diaper** and a urination collecting pad. SOLUTION: An electrostatic capacity sensor sheet 1

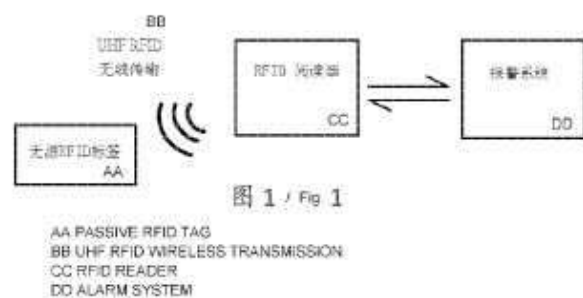
has a film 1a and a plurality of electrodes 1b formed in one surface of the film 1a. A plurality of sensor elements are constituted by connecting each of electrodes 1b by leads and having electrode rows arranged in a plurality of rows. The electrode distance in the row direction in the electrode rows is in the range of 20 to 55 mm, the electrodes has a rectangular shape present in a rectangular shape from 15 to 35 mm. Such an electrostatic capacity sensor sheet 1 is attached to the outside surface of the absorbent article. The absorbent part of the absorbent article has a polymer quantity capable of absorbing urine of a centrifugal holding quantity of at least 350 g. The electrostatic capacity sensor sheet 1 detects **impedance** change between the electrodes by each of the sensor elements and detects the urination in the absorbent article such as the urine collecting pad.

14/23 © EPODOC / EPO

- PN - [CN202711437U](#) U 20130130
- PR - CN20122285900U 20120618
- AP - CN20122285900U 20120618
- DT - I
- PA - ZHUOYUEJIN TECHNOLOGY SHENZHEN CO LTD
- TI - Wireless enuresis alarm and paper **diaper** product corresponding to same
- AB - The utility model provides a wireless enuresis alarm which comprises passive RFID (radio frequency identification) tags, an RFID reader and an alarm system. Signals are sent to the passive RFID tags and messages replied are read from a paper **diaper** product by the RFID reader. Data are read and analyzed by the RFID reader. When wetness exceeds a certain limit, the alarm system is started by the RFID reader. The number of the passive RFID tags is N (N is a positive integer). The passive RFID tags are set to be read by the RFID reader when wetness of the passive RFID tags is higher or lower than a certain wetness level. The utility model further provides the paper **diaper** product comprising the wireless enuresis alarm. The passive RFID tags are added on the paper **diaper** product, and accordingly the RFID tags can be influenced by wetness of neighboring environment. The parameters of **impedance** and the like are changed, and data read by the RFID reader are changed. Thus, the enuresis condition of the paper **diaper** product is judged.

15/23 © EPODOC / EPO

- PN - [CN102722966](#) A 20121010
- PR - CN20121200472 20120618
- AP - CN20121200472 20120618
- DT - I
- CT - || STSE (A)
- [CN102324171](#) A 20120118
- [Y] (ZHUOYUEJIN TECHNOLOGY SHENZHEN CO LTD)
- [Y]
- [CN201775719U](#) U 20110330
- [A] (SINOPULSAR TECHNOLOGY INC)
- [A]
- [CN202711437U](#) U 20130130
- [R] (ZHUOYUEJIN TECHNOLOGY SHENZHEN CO LTD)



[R]
[CN101069668](#) A 20071114
 [Y] (ZHAO ZIFU [CN])
 [Y]
[CN201191877Y](#) Y 20090204
 [A] (LG ELECTRONICS CHINA RES
 & DEV [CN])
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[CN202101963U](#) U 20120104
 [A] (BEIJING JUCSAN
 TECHNOLOGY DEV CO LTD)
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- CCI - [G08B21/20](#)
- CUI - [A61F13/49](#) ; [A61F13/42](#) ;
[G06K7/00](#)
- CCA - [A61F2013/424](#)
- PA - ZHUOYUEJIN TECHNOLOGY
 SHENZHEN CO LTD
- TI - Wireless enuresis alarm and
 paper **diaper** product
 corresponding to same
- AB - The invention provides a
 wireless enuresis alarm which
 comprises passive RFID (radio
 frequency identification) tags,
 an RFID reader and an alarm
 system. Signals are sent to the
 passive RFID tags and
 messages replied are read from
 a paper **diaper** product by the
 RFID reader, data are read and
 analyzed by the RFID reader,
 and when wetness exceeds a
 certain limit, the alarm system
 is started by the RFID reader.
 The number of the passive RFID
 tags is N (N is a positive
 integer), the passive RFID tags
 are set to be read by the RFID
 reader when wetness of the
 passive RFID tags is higher or
 lower than a certain wetness
 level. The invention further
 provides the paper **diaper**
 product comprising the
 wireless enuresis alarm. The
 passive RFID tags are added on
 the paper **diaper** product, and
 accordingly the RFID tags can
 be influenced by wetness of
 neighboring environment,
 parameters of **impedance** and

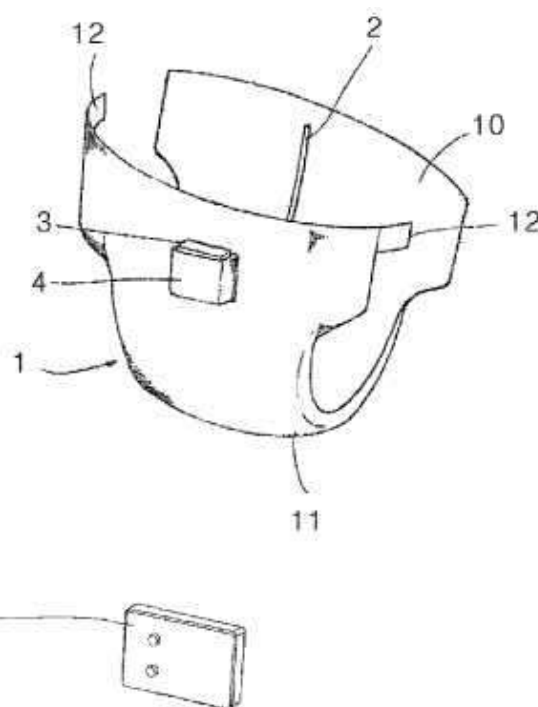
the like are changed, data read by the RFID reader are changed, and enuresis condition of the paper **diaper** product is judged.

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- PN - [CN201775719U](#) U 20110330
 PR - CN20102186273U 20100507
 AP - CN20102186273U 20100507
 DT - I
 PA - SINOPULSAR TECHNOLOGY INC
 TI - State warning system
 AB - The utility model provides a state warning system which comprises a **diaper** body for absorbing excrement, an inductor, a signal sending device, a signal receiving device and a first power supply, wherein the inductor and the signal sending device are arranged on the **diaper** body; the signal receiving device is arranged on the warming fabric of a user wearing the **diaper** body; the first power supply supplies electric power for the signal receiving device; the inductor comprises two wires; the signal sending device comprises an **impedance** detector, a first digital signal logic processor and a first wireless transceiver; and the signal receiving device comprises a second wireless transmitting receiver, a reminding device and a second digital signal logic processor. In the state warning system, the **impedance** between the two wires arranged on the **diaper** body are utilized to judge whether urine or excrement exists on the **diaper** or not, and an alarm is given out to notice the state of the **diaper** body to care personnel.

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- PN - [US2010277324](#) A1 20101104
 PR - US20090432724 20090429
 AP - US20090432724 20090429
 DT - *; Rep
 CT - || R141 (A1)
[US2004004548](#) A1 [];
[US2009062758](#) A1 [];
[US2008284608](#) A1 []
 CCI - [A61F13/42](#)
 TI - **Diaper** with Urine Sensor
 AB - A **diaper** with urine sensor, where at least a sensing line is laid on the surface of absorption layer of the **diaper**, and a bag is arranged nearby either end of the **diaper** and covered partially onto the sensing line, then a fixed urine sensor is arranged within the bag, so that the sensing point on the conduction surface gets contact with the sensing line



for electrical connection; when the **impedance** of sensing line varies from the changing humidity of the absorption layer of the **diaper**, the signal will actuate the fixed urine sensor, e.g. sending an alarming sound, lamplight or vibration, thus notifying the users of replacing the **diaper** in a timely manner; the urine sensor can also be removed and recycled freely with extremely high cost-effectiveness and applicability.

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- PN - [CN201438982U](#) U 20100421
- PR - CN20092145724U 20090330
- AP - CN20092145724U 20090330
- DT - I
- PA - JIASEN YE
- TI - **Diaper** with wetting inductor
- AB - The utility model discloses a **diaper** with a wetting inductor. One or more induction wires are distributed on the surface of an absorption layer of the **diaper**, and a bag body which covers one segment of the induction wires is arranged at any one end near the **diaper**. The fixed type wetting inductor is arranged in the bag body, and induction points on the conductive surface of the wetting inductor are just communicated with the induction wires in a contact manner. Therefore, when changing of the wetting degree on the absorption layer of the **diaper** affects the **impedance** of the induction wires, a signal can promote the fixed type wetting inductor to give responses at once such as sending warning sound effects and giving off lights or vibration so as to instantly notify a user of replacing the **diaper**. As the wetting inductor can be freely taken down and can be repeatedly used, the **diaper** with the wetting inductor is quite economical and practical.

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- PN - [JP2006250912](#) A 20060921
- PR - JP20050072103 20050314
- AP - JP20050072103 20050314
- DT - I
- FI - A41B13/02&L; A41B13/02&Q; A61F13/42&Z; A61F5/44&S; G01N29/16
- FT - 2G047/AA04; 2G047/BA01; 2G047/BC01; 2G047/BC12; 2G047/CA01; 2G047/EA12; 2G047/EA16; 2G047/GF06; 2G047/GF11; 2G047/GG33; 2G047/GH03; 2G047/GH15; 3B200/AA01; 3B200/AA11; 3B200/AA12; 3B200/AA13; 3B200/AA14; 3B200/AA15; 3B200/DF01; 3B200/DF04; 3B200/DF05; 4C098/AA09; 4C098/CD09
- PA - ETF KK; AI TECHNOLOGY KK
- TI - **DIAPER** SOIL DETECTOR

- AB
- PROBLEM TO BE SOLVED: To provide a **diaper** soil detector capable of detecting soil indirectly from an outside of a **diaper**, without contacting directly with the soil in an inside of the **diaper**, by irradiation of an ultrasonic wave.
 - SOLUTION: This **diaper** soil detector comprises a transmission part for transmitting the ultrasonic wave toward the **diaper**, a reception part for receiving a reflected wave reflected by the soil in the inside of the **diaper** with transmission through the **diaper** of the transmitted ultrasonic wave, and a detecting part for detecting the soil in the inside of the **diaper** by analyzing an acoustic **impedance** in the inside of the **diaper**, based on the reflected wave received by the reception part.
 - COPYRIGHT: (C)2006,JPO&NCIPI

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- PN - [JP2002224093](#) A 20020813
- PR - JP20010028468 20010205
- AP - JP20010028468 20010205
- DT - I
- FI - A41B13/02&L; A41B13/02&Q; A61B5/20; A61F13/42&F; A61F5/44&S
- FT - 3B029/BE04; 3B200/AA01; 3B200/BB09; 3B200/BB30; 3B200/DF04; 3B200/DF05; 4C038/DD01; 4C038/DD05; 4C038/DD06; 4C098/AA09; 4C098/CC01; 4C098/CD09; 4C098/CE06; 4C098/CE08
- PA - KAO CORP
- TI - EXCRETION SENSOR AND EXCRETION DETECTOR
- AB - PROBLEM TO BE SOLVED: To provide an excretion sensor and an excretion detector capable of highly precisely measuring an excretion quantity by reducing an effect of movement of a human body. SOLUTION: A sensor part 1, or the excretion sensor, is provided with multiple sensor devices distributedly disposed in the outside of a **diaper** and in a wide range of the **diaper** and detects the excretion quantity in the **diaper** based on the multiple outputs of the multiple sensors. The multiple sensor devices are provided with a film 11, multiple positive electrodes 12 distributedly disposed in one surface of the film 11, negative electrodes 13 disposed in the other surface of the film 11. Each of the multiple sensor devices detects **impedance** change between the positive electrode 12 and the negative electrode 13.

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- PN - [JP2002022688](#) A 20020123
- PNFP - JP3552997B B2 20040811
- PR - JP20000202209 20000704
- AP - JP20000202209 20000704
- DT - I
- CCA - [A61F13/42](#)
- FI - A41B13/02&L; A41B13/02&Q; A61F13/42&F; A61F5/44&S; G01N27/00&H; G01N27/02&A
- FT - 2G060/AA07; 2G060/AC01; 2G060/AE11; 2G060/AF06; 2G060/AF07; 2G060/AF10; 2G060/AG06; 2G060/AG10; 2G060/HD03; 3B029/BE04; 3B200/AA01; 3B200/AA13; 3B200/DE11; 3B200/DE15; 3B200/DF04; 3B200/DF05; 4C098/AA09; 4C098/CD08; 4C098/CD09
- PA - (A)
KAO CORP

TI - (A)
EXCRETION DETECTOR

AB - (A)
PROBLEM TO BE SOLVED: To provide an excretion detector capable of enhancing the detection accuracy of the presence of excretion and capable of being miniaturized. SOLUTION: The excretion detector for detecting the presence of excretion in a **diaper** for absorbing excretion has a sensor part 2 for detecting the **impedance** change between a pair of electrodes formed side by side in a slightly separated state and a frequency converter circuit 10 changed in frequency corresponding to the **impedance** change between a pair of electrodes detected by the sensor part 2.

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PN - [JP2002022687](#) A 20020123

PR - JP20000202195 20000704

AP - JP20000202195 20000704

DT - I

CCA - [A61F13/42](#)

FI - A41B13/02&L; A41B13/02&Q; A61F13/42&F; A61F5/44&S; G01N27/00&H; G01N27/02&A

FT - 2G060/AA07; 2G060/AC01; 2G060/AE11; 2G060/AF06; 2G060/AF07; 2G060/AF10; 2G060/AG06; 2G060/AG10; 2G060/HD03; 3B029/BE04; 3B200/AA01; 3B200/DE11; 3B200/DF04; 3B200/DF05; 4C098/AA09; 4C098/CD09

PA - KAO CORP

TI - EXCRETION DETECTION SENSOR

AB - PROBLEM TO BE SOLVED: To provide an excretion detection sensor capable of enhancing the detection accuracy of the presence of excretion. SOLUTION: The excretion detection sensor for detecting the presence of excretion in a **diaper** for absorbing excretion is formed by arranging a pair of electrodes 3, 4 on one surface of a hard substrate 7 in a slightly separated state and a pair of the electrodes 3, 4 have a sensor part 2 attachable to the outer surface of the **diaper** and the sensor part detects the **impedance** change between a pair of the electrodes 3, 4.

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PN - [JPH10295726](#) A 19981110

PR - JP19970107012 19970424

AP - JP19970107012 19970424

DT - I

FI - A41B13/02&E; A41B13/02&L; A61F13/42&F; A61F13/511; A61F13/511&400; A61F5/44&S

FT - 3B029/BE04; 3B200/AA01; 3B200/BA01; 3B200/BA02; 3B200/BB14; 3B200/DC01; 3B200/DC02; 3B200/DC07; 3B200/DF04; 4C098/AA09; 4C098/CC03; 4C098/CC08; 4C098/CD09; 4C098/DD16; 4C098/DD17; 4C098/DD22; 4C098/DD23; 4C098/DD30

PA - MATSUSHITA ELECTRIC IND CO LTD

TI - DISPOSABLE **DIAPER**

AB - PROBLEM TO BE SOLVED: To give no uncomfortable feeling due to urination and detect urination more adequately, by providing a disposable **diaper** with a leakage sensor for detecting urination by a change in **impedance** between electrodes. SOLUTION: The disposable **diaper** comprises an impermeable sheet, a water

absorbing layer and a permeable sheet disposed successively at least from a lining and by forming strap-shaped water-absorptive material layers 10, 11 in the impermeable sheet 1 so as to bridge between a pair of electrodes 2, 3 of a leakage detecting part composed of at least the pair of the electrodes 2, 3, a change in **impedance** between both electrodes due to urination is made more evident.

[SS 15]