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Chao(10) **Pub. No.: US 2010/0122391 A1**(43) **Pub. Date: May 20, 2010**(54) **CLOTHING CAPABLE OF GENERATING
SIGNAL IN WET ENVIRONMENTS**(75) Inventor: **Mei-Hua Chao**, Taichung (TW)

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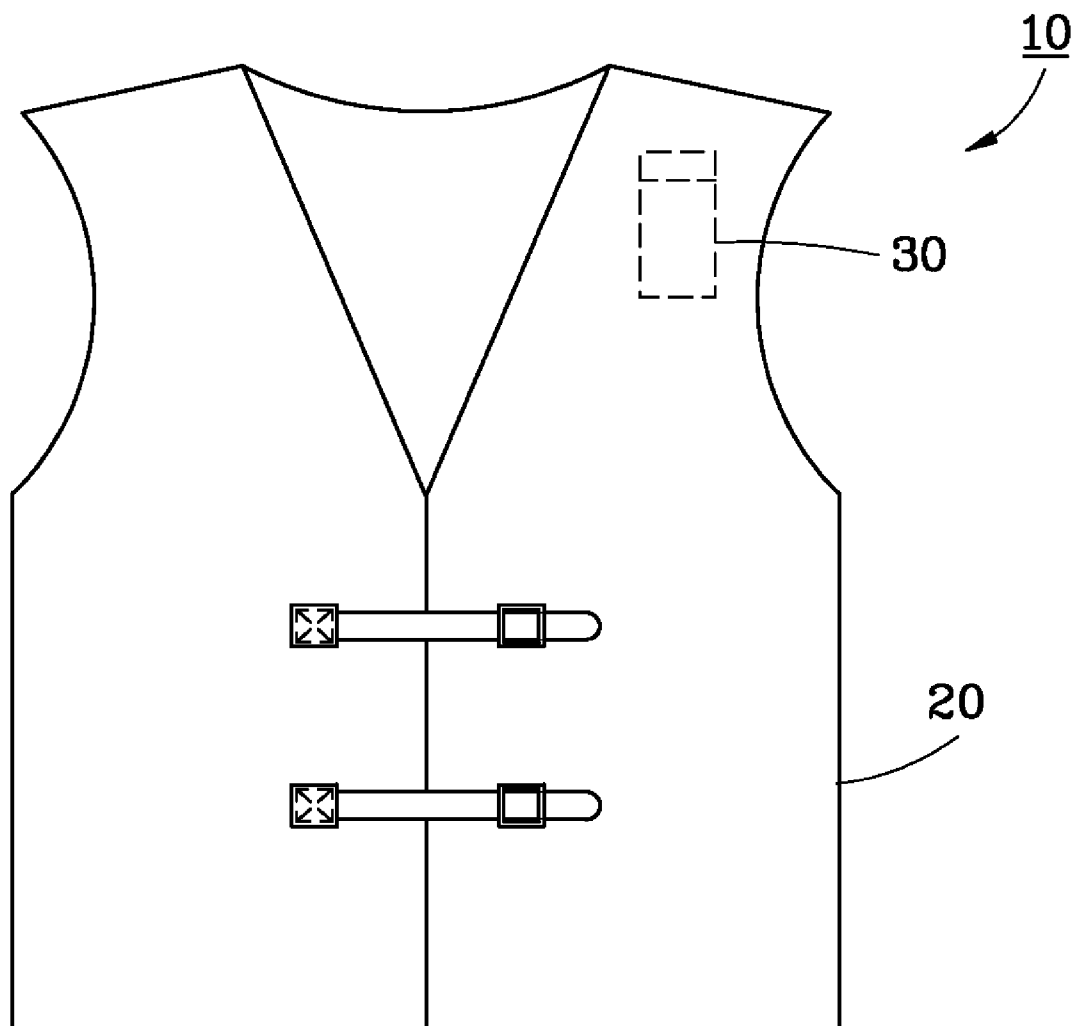
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(57)

ABSTRACT

An article of clothing includes a garment, a container installed in the garment for infiltration of liquids and filled with an electrolyte solution made of organic materials and having two electrodes electrically connected with the electrolyte solution, and an electric device electrically connected with the electrodes. When the garment is exposed to a wet environment, the water liquids can permeate through the container to mix with the electrolyte solution such that an electric current can be created to drive the electronic device to generate alerting or attracting signals automatically. The garment can take the forms of life vest, T-shirt, jean, coat, etc.



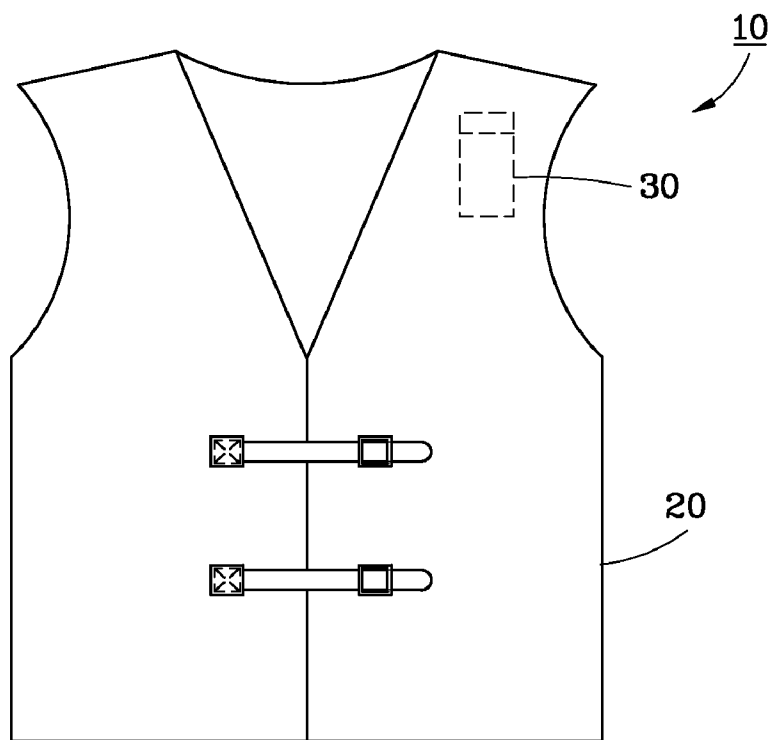


FIG. 1

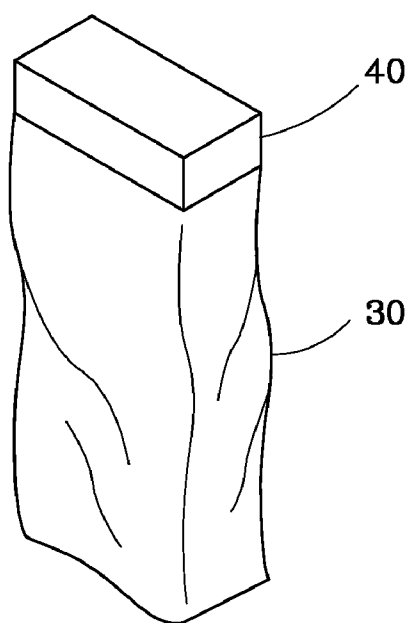


FIG. 2

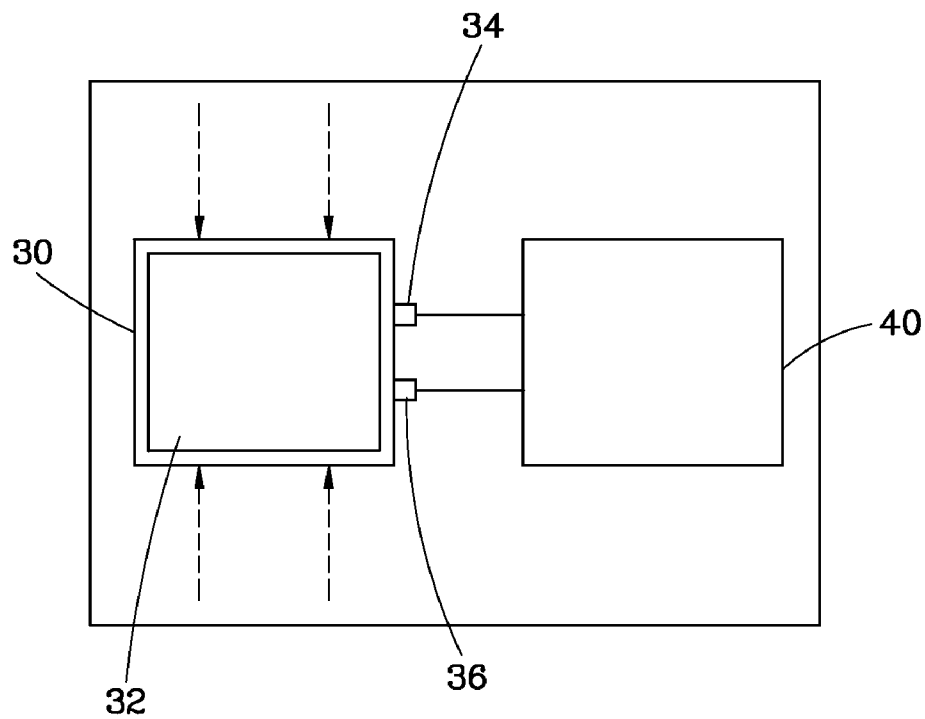


FIG. 3

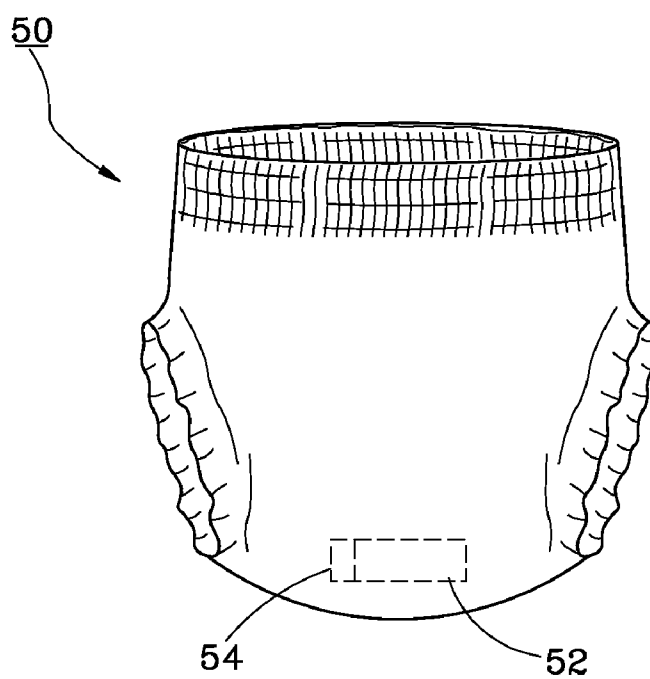


FIG. 4

CLOTHING CAPABLE OF GENERATING SIGNAL IN WET ENVIRONMENTS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates generally to an article of clothing, and more specifically to an article of clothing that can generate signals when used in a wet environment.

[0003] 2. Description of the Related Art

[0004] A life jacket is a device for aquatic activities that is designed to assist a wearer to keep afloat when in water, thereby enhancing safety on the water for the wearer.

[0005] The life jacket is generally filled with foam or air for providing buoyancy to the wearer. In order to increase the function of the life jacket, the life jacket may comprise a light-emitting unit and a manual power unit. By means of starting the power unit manually, the light-emitting unit can be driven to radiate light or generate a flash of light, thereby catching lifesavers' attention.

[0006] However, when a non-swimmer wearing the life jacket falls into water unexpectedly, he/she will often panic and may likely forget the proper way to operate the power unit. Consequently, the life jacket fails to provide the anticipated function of emitting light when the wearer is in such urgent situations.

[0007] Further, other than for the above dire conditions, this current invention can also be applied mainly for attracting passers-by on the streets in rainy days, or simply as a decoration on clothing. Additionally, clothing of the present invention can much enhance the wearer's safety automatically when he or she is walking in the streets on rainy dark days.

SUMMARY OF THE INVENTION

[0008] The present invention has been accomplished in view of the above-noted circumstances. It is one objective of the present invention to provide an article of clothing, which can generate signals automatically when it is exposed to a wet environment.

[0009] To achieve this objective of the present invention, the clothing comprises a garment, a container embedded in or attached to the garment for infiltration of water liquids, which is filled with a dry electrolyte solution made of organic materials and having two electrodes electrically connected to the electrolyte, and an electric device electrically connected to the above electrodes for generating signals.

[0010] When the garment is exposed to a wet environment, the water solution can permeate through the container to mix with the originally dry electrolyte such that an electric current can be created to drive the electronic device to generate the signals.

[0011] The scope of applicability of the present invention will become apparent from the detailed description given hereinafter. However, it should be understood that the detailed description and specific examples, while indicating preferred embodiments of the invention, are given by way of illustration only, since various changes and modifications within the spirit and scope of the invention will become apparent to those skilled in the art from this detailed description.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] The present invention will become more fully understood from the detailed description given herein below

and the accompanying drawings which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:

[0013] FIG. 1 is a schematic drawing of an article of clothing according to a first preferred embodiment of the present invention;

[0014] FIG. 2 is a perspective view of the container of the clothing according to the first preferred embodiment of the present invention;

[0015] FIG. 3 is a schematic drawing of the clothing according to the first preferred embodiment of the present invention, showing the electronic device is electrically connected with the electrolyte, and

[0016] FIG. 4 is a perspective view of an article of clothing according to a second preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0017] As shown in FIGS. 1 and 2, an article of clothing 10 in accordance with a first preferred embodiment of the present invention comprises a garment 20 embodied as a life jacket, a container 30, and an electrical device 40.

[0018] The container 30 is made of porous materials, such as a two-way flow membrane that includes fiber or polymers. Preferably, the container 30 can be made of flexible materials to be fitted to the type of the garment 20, or can be made of inflexible materials. The container 30 is filled with a dry electrolyte 32 and equipped with a positive electrode 34 and a negative electrode 36. The electrolyte 32 can be, but not limited to, organic materials containing chlorophyll or organic polymers including salt ions; and further, the positive electrode 34 can be, but not limited to, a carbon rod and graphite, and the negative electrode 36 can be, but not limited to, copper, aluminum, stainless steel, zinc oxide (ZnO), manganese oxide (MnO), and magnesium oxide (MgO), such that the positive electrode 34 and the negative electrode 36 have different oxidation-reduction potentials. Besides, the container 30 is detachably mounted to any position of the garment 20 by way of sewing, or using hook-and-loop fasteners.

[0019] The electrical device 40 can be embodied as, but not limited to, a radio transmitter, a light-emitting unit or a sound producing device so as to generate an electrical wave, rays of light or sound. The electrical device 40 can be mounted to the garment 20 and electrically connected with the positive and negative electrodes 34 and 36 by wires, or mounted to the container 30 and electrically connected with the positive and negative electrodes 34 and 36 by wires, as shown in FIG. 2.

[0020] By means of the aforesaid design, when the clothing 10 is immersed in water, water can permeate through the container 30 to mix with the dry electrolyte 32 contained in the container 30 and thus reduce resistance of the electrolyte solution 32, such that an electric current can be created by an oxidation-reduction reaction caused between the positive and negative electrodes 34 and 36 through the then conducting electrolyte 32, thereby driving the electrical device 40 to generate the electrical wave, rays of light or sound.

[0021] As a result, when a person wearing the clothing 10 of the present invention falls into the sea, the electronic device 40 can send out signals automatically by the direct mixing of the seawater and the electrolyte 32 without taking any manual work on the electronic device 40, so that the wearer stands a better chance of being rescued, especially in the dark.

[0022] In conclusion, the clothing **10** of the present invention is crucial to its wearer in terms of increasing chances of being rescued from drowning in water owing to its automatic signal generating capability. Moreover, the clothing **10** of the present invention provides the organic electrolyte **32** that can be absorbed and decomposed completely in soil without causing threat to the environment. Furthermore, the fact that the clothing **10** of the present invention only allows the electrochemical reaction within to proceed in a wet environment, rather than in a dry situation, guarantees its long service life.

[0023] The clothing **10** can be realized under various kinds of design or outlook without departing from the spirit of the present invention. For example, FIG. 4 shows an article of clothing **50** in accordance with a second embodiment of the present invention, i.e., as a diaper. In it, the container **52** and the electrical device **54** are installed inside the clothing **50**.

[0024] Once the diaper is wet, the electrical device **54** is activated immediately owing to the permeation of the urine through the container **52** and thus parents or a babysitter will be reminded of the need to change the diaper, thereby preventing a baby from catching cold or suffering a diaper rash. Such same invention can also be applied on some disabled or old persons.

[0025] With the invention being thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

What is claimed is:

1. An article of clothing comprising:

a garment;

a container installed in said garment for permeation of liquids and filled with an electrolyte made of organic materials and having two electrodes electrically connected with said electrolyte;

an electronic device electrically connected to said electrodes for generating signals;

whereby when said garment is exposed to a wet environment, the water liquids can permeate through said container to mix with said electrolyte, such that an electric current can be created to drive said electronic device to generate said signals.

2. The article of clothing as claimed in claim 1, wherein said container is made of flexible materials to be fitted to said garment.

3. The article of clothing as claimed in claim 1, wherein said electrolyte includes chlorophyll.

4. The article of clothing as claimed in claim 1, wherein said electrolyte is an organic polymer that contains salt ions.

5. The article of clothing as claimed in claim 1, wherein said electrodes of said container have different oxidation-reduction potentials.

6. The article of clothing as claimed in claim 1, wherein said container is detachably mounted to said garment.

7. The article of clothing as claimed in claim 1, wherein said electronic device can be a light-emitting device or a sound producing device.

8. The article of clothing as claimed in claim 1, wherein one of said electrodes is selected from the group consisting of a carbon rod and graphite.

9. The article of clothing as claimed in claim 1, wherein one of said electrodes is selected from the group consisting of copper, aluminum, stainless steel, zinc oxide, manganese oxide, and magnesium oxide.

10. The article of clothing as claimed in claim 1, wherein said electronic device is mounted to said garment.

11. The article of clothing as claimed in claim 1, wherein said electronic device is mounted to said container.

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