process that can reduce the number of process steps and save on space and yet produce a reliable battery and circuit for an enclosure.

[0218] The above-described method (see FIGS. **1-12**) for placing a battery onto a substrate can be used in many different ways in devices to produce a more compact and reliable electronic package having a battery which is capable of being recharged a very large number of times. The batteries and electronics could be placed directly onto an enclosure portion therefore saving space. As a result, the design of the various electronic devices could be smaller than corresponding devices that are currently used.

[0219] **FIG. 14A** is an exploded perspective view of a portion of an enclosure that includes both a battery **1110**, which is deposited directly onto the enclosure portion **1100**. The enclosure portion **1100** includes an interior surface **1101** and an exterior surface **1102**. In this particular embodiment, the battery **1110** is deposited onto the interior surface **1101** of the enclosure portion **1100**. It should be noted that the enclosure portion **1100** resembles the first portion **1101** or the bottom portion, as shown in **FIG. 13**. The interior **1101** of the enclosure portion **1100** also includes a plurality of traces **1120** for electrically coupling the battery **1110** to various electronic components **1130**, **1131**, which are attached to sites **1140** and **1141**. The sites **1140** and **1141** include the electrical contact pads for electrically connecting the electrical components **1130** and **1131** to the sites **1140** and **1141**. The pads associated with the sites **1140**, **1141** are also directly deposited onto the interior surface **1101** of the enclosure portion **1100**. Advantageously, the battery **1110** can be deposited onto the interior portion **1101** of the enclosure portion **1100** as well as the traces **1120** and the pads associated with the sites **1140** and **1141**. Advantageously, in order to complete an electronic circuit, the only process steps that need to be accomplished are to add the electronic components **1130** and **1131**. In some instances it also may be possible to produce some of the electronic components during the manufacturing steps required to place the thin film battery **1110** onto the interior portion **1101** of the enclosure **1100**. Optionally, a protective layer **1150** may be placed over the battery **1110** or other select portions deposited on the interior surface **1101** of the device enclosure **1100**. The optional protective layer is shown in phantom and is referenced by reference numeral **1150**.

[0220] **FIG. 14B** is an exploded perspective view of a portion **1100** of an enclosure for an electronic device according to another embodiment of this invention. The enclosure portion **1100** includes an interior and an exterior surface **1102**. In this particular embodiment, the battery **1110** is deposited on the exterior surface **1102** of the enclosure portion **1100**. The battery **1110** includes a post **1160** for the cathode and another post **1162** for the anode. The posts **1160** and **1162** terminate or attach to through holes **1161** and **1163**. The through holes **1161** and **1163** provide electrical communication to various components located inside the enclosure portion **1100**. In essence, the chief difference between the embodiment shown in **FIG. 14**A and the embodiment shown in this **FIG. 14B** is that the battery portion **1110** is deposited on the exterior surface **1102** of the enclosure portion **1100**. A protective coating **1150** may be placed over the battery portion **1110** and, more specifically, over the battery portion **1110** and the electrical posts **1160** and **1162** and the through holes **1161** and **1163**. The protective layer **1150** may be translucent or may be colored to match the exterior surface **1102** of the enclosure portion **1100**.

[0221] **FIG. 14C** is an exploded perspective view of a portion of enclosure **1103** for an electronic device according to yet another embodiment of this invention. The enclosure portion **1103** includes a battery **1110** that is deposited on the interior surface of the enclosure portion **1103**. The enclosure portion **1103** includes an interior portion **1101** and an exterior portion **1102**. The enclosure portion **1103** corresponds to a top portion including a display that can be viewed by the consumer during use. The battery **1110** is deposited on the interior surface **1101** of the enclosure portion **1103**. Also included are traces **1120** as well as electronic components **1130** and **1131**. Completing the circuit is an LCD or liquid crystal display **1170**. The LCD is positioned near or at an opening in the enclosure device **1103** so that the readable portion of the LCD **1170** can be viewed from the exterior surface **1102** of the enclosure portion **1103**. Enclosure portion **1103** roughly corresponds to the second enclosure portion **1102** or on top of the electronic device shown in **FIG. 13**.

[0222] An addition to depositing a device or a battery device or energy device **1110** onto the surface of an enclosure, another embodiment of this invention is to produce a sheet including multiple cells or batteries **1110**. The batteries **1110** are formed on a sheet of flexible or plastic material **1300**. It should be noted that the size of the cells **1110** and the placement of the cells or individual batteries **1110** can be varied for producing various different sizes and styles of formed batteries.

[0223] **FIGS. 15A through 15E** disclose a method whereby the battery is formed into a conformed or conformable sheet having roughly the same shape as either the interior or exterior surface of an electronic device. The conformed sheet can then be placed or adhered directly to the interior surface or exterior surface of an electronic device. The sheet is produced with a number or plurality of cells **1110**, as will be discussed later in this application. Once the sheet is formed as described later in this application, the sheet **1300** is diced into individual cells or individual battery portions **1310**. In other words, a battery **1110** will be formed on a dice sheet **1310** from the main sheet **1300**. The individually diced battery portion **1310** can then be formed into a variety of shapes, as shown by **FIGS. 15C, 15D** and **15**E. These shapes can be any desired shapes. In some embodiments or in most embodiments, the shape of the sheet will conform or will be able to be placed on the interior or exterior surface of an electronic device. **FIG. 15**C, for example, shows a roughly square battery that has folded up sides or vacuum formed sides **1320**. This particular device could be placed on the interior surface of an electronic device such as a garage door opener or any other like device.

[0224] **FIG. 15D** shows a more rectangular portion or diced sheet which resulted from a more rectangular battery laid down upon a sheet and diced into an individual battery portion **1310**. This more rectangular formation may be glued or adhered to the inner surface of an electronic enclosure for a personal data assistant. In the alternative, the form shown in **FIG. 15D** may also be suitable for placement on the exterior surface of an electronic device, such as a portable data assistant.

[0225] **FIG. 15E** shows a more formed device that might be found on a cell phone or similar device. **FIG. 15E** may