SUMMARY

Event markers, e.g., ingestible event markers, having high reliability are provided. In one aAspects, ~~of~~ there is provided a highly reliable event markers comprising:~~include~~ a support;, a control circuit physically associated with the support to control the highly reliable event marker;, a first electrochemical material physically associated with the support and electrically coupled to the control circuit;, a second electrochemical material electrically coupled to the control circuit and physically associated with the support at a location different from the location of the first material, such that the first and second electrochemical materials are electrically isolated from each other; and a membrane physically associated to the support and positioned relative to the first electrochemical and second electrochemical materials to generate a virtual dipole length larger than an actual dipole length defined by the first and the second electrochemical materials.

In another aspect, there is provided a system comprising: a highly reliable ingestible event marker comprising: a support; a control circuit physically associated with the support to control the highly reliable event marker; a first electrochemical material physically associated with the support and electrically coupled to the control circuit; a second electrochemical material electrically coupled to the control circuit and physically associated with the support at a location different from the location of the first material, such that the first and second electrochemical materials are electrically isolated from each other; and a membrane physically associated to the support and positioned relative to the first electrochemical and second electrochemical materials to generate a virtual dipole length larger than an actual dipole length defined by the first and the second electrochemical materials.

BRIEF DESCRIPTION OF THE FIGURES

FIGS. 1A to 1F provide views of various IEM configurations according to different aspects of the invention.

FIGS. 2A and 2B provide illustrations of an IEM that includes a membrane having deployable arms.

FIG. 3 provides a view of an IEM in which the IEM component is positioned off-center relative to the membrane.

FIG. 4 provides a view of an IEM having a weight positioned on one side of the membrane.

FIG. 5 provides a view of an IEM having a water-swellable component positioned on side of the membrane.

FIGS. 6A and 6B provide views of different IEM configurations which incorporate effervescent structures.

FIGS. 7A, 7B and 8 provide different views IEMs having a tablet configuration.