

CLAIMS

1. A wound monitoring apparatus, comprising:
a wound dressing configured to be positioned in contact with one or more of a wound or skin surrounding the wound, the wound dressing comprising at least one substantially flexible substrate supporting a plurality of sensors, a first sensor of the plurality of sensors positioned on the substrate and configured to obtain a measurement of the skin surrounding the wound.
2. The apparatus of Claim 1, wherein a second sensor of the plurality of sensors is positioned on the substrate and configured to obtain a measurement of the wound.
3. The apparatus of Claim 1 or Claim 2, wherein the substrate is sized to be extended at least partially beyond area of the wound and configured to be positioned at least partially over skin surrounding the wound.
4. The apparatus of any one of Claims 1-3, wherein the wound dressing comprises a wound contact layer.
5. The apparatus of any one of Claims 1-4, wherein the at least one substantially flexible substrate comprises at least one of a substantially flexible printed circuit or a substantially flexible non-conducting mesh.
6. The apparatus of Claim 5, wherein the substantially flexible printed circuit comprises a flexible polymer.
7. The apparatus of any one of Claims 1-6, wherein at least some of the plurality of sensors are electrically connected with each other, and wherein the plurality of sensors is configured to be electrically connected with a controller and a power source.
8. The apparatus of Claim 7, wherein the controller is configured to receive data from the plurality of sensors and communicate the received data to a computing device configured to process the received data to determine one or more conditions associated with the wound.
9. The apparatus of Claim 8, wherein the at least one of the controller or the processing device is configured to indicate, based on the one or more conditions associated with the wound, that the wound is healing.
10. The apparatus of any one of Claims 1-9, wherein the plurality of sensors comprises one or more temperature sensors, conductivity sensors, multispectral optical measurements

sensors, pH sensors, pressure sensors, colorimetric sensors, optical sensors, ultraviolet (UV) sensors, or infrared (IR) sensors.

11. The apparatus of any one of Claims 1-10, wherein the plurality of sensors comprises a skin elasticity sensor configured to perform an ultrasound sweep of a region of the skin surrounding the wound.

12. The apparatus of any of the preceding claims, wherein the wound dressing comprises a wound contact layer and the substrate is positioned on or in the wound contact layer.

13. The apparatus of Claim 12, further comprising an absorbent layer positioned over the wound contact layer and a backing layer positioned over the wound contact layer, wherein the wound contact layer is sealed to the backing layer.

14. The apparatus of Claim 13, further comprising a port on the backing layer, the port configured to connect the wound dressing to a source of negative pressure.

15. The apparatus of any one of Claims 1-14, wherein the wound dressing is included in a multi-layer wound dressing configured to treat the wound without the use of negative pressure.

16. The apparatus of any one of Claims 1-15, further comprising a wound packing layer and a drape that are configured to be positioned over the wound separately from the wound dressing.

17. The apparatus of any one of Claims 1-14 or 16, further comprising a negative pressure source configured to be in fluid communication with the wound dressing and further configured to apply negative pressure to the wound.