Claims:

1. A sensor head comprising:

a housing configured to attach to a body surface of a patient and comprising a bottom surface;

at least two light sources configured to deliver light into a first region of the patient comprising a blue LED first light source and a green LED second light source, wherein the blue LED first light source delivers light at an excitatory wavelength; and

at least one light detector configured to detect light emitted from the tissue of the patient at only an emission wavelength at a second region of the patient;

wherein the housing encloses the at least two light sources and the at least one light detector.

2. The sensor head according to claim 1, wherein the sensor head further comprises a contact surface on the bottom surface of the housing.

3. The sensor head according to claim 2, wherein the contact surface is configured to be attached to the body surface of a patient with a biocompatible adhesive material.

4. The sensor head according to claim 3, wherein the adhesive material is configured to transmit light through the at least two light sources into the patient and from the patient to the light detectors.

5. The sensor head according to claim 3, wherein the adhesive material is an optically transparent material.

6. The sensor head according to claim 3, wherein the adhesive material is produced from a non-fluorescing material.

7. The sensor head according to claim 2, wherein the contact surface comprises an aperture plate including one or more apertures configured to transmit light between the skin of the patient and the at least two light sources and the at least one light detector.

8. The sensor head according to claim 2, wherein the contact surface comprises a temperature sensor opening configured to provide a thermal path from the skin surface of the patient to a temperature sensor inside the housing.

9. The sensor head according to claim 7, wherein the aperture plate comprises the sensor mount, and wherein the sensor mount is configured to inhibit leakage of light between the at least one light source and the at least one light detector.

10. The sensor head according to claim 9, wherein the sensor mount is comprised of an electrically conductive material.

11. The sensor head according to claim 7, wherein the apertures are positioned towards the center of the contact surface.

12. The sensor head according to claim 11, wherein the bottom surface of the housing is configured to be flared to provide a greater surface area to contact the body surface of the patient.

13. The sensor head according to claim 12, wherein the contact surface is configured to be attached to the body surface of a patient with a transparent adhesive material.

14. The sensor head according to claim 13, wherein the transparent adhesive material is positioned on the bottom surface such that the adhesive material covers the apertures.