CLAIMS

1. A photobiomodulation therapy garment comprising:

a garment configured to be donned by a user atop a skin surface, the garment comprising a first surface and a second surface opposite the first surface, the first surface being configured to face the skin surface once the garment is donned, and

a photobiomodulation unit integrated within the garment, the photobiomodulation unit comprising a connection terminal, one or more near-infrared light sources, and one or more sensors, the connection terminal in electronic communication with the one or more near-infrared light sources and the one or more sensors, wherein the one or more near-infrared light sources are each configured to emit near-infrared light at a wavelength between 600 nm to 1600 nm and at a predetermined dosimetry,

a controller, the controller including a processor and a memory, the controller configured to operationally engage a terminal rail of the connection terminal in a manner that establishes electronic communication between the controller and the connection terminal;

wherein the first surface of the garment includes a first portion comprising one or more light openings, with each of the one or more near-infrared light sources being in operational alignment with the one or more light openings to permit proper passage of near-infrared light from the one or more near-infrared light sources therethrough,

wherein the first surface of the garment includes a second portion comprising one or more sensor openings with each of the one or more sensors being in operational alignment with the one or more sensor openings to permit proper functionality of the one or more sensors therethrough, and

wherein the processor and the memory are configured with executable instructions for independently controlling each of the one or more near-infrared light sources and each of each of the one or more sensors.

2. The photobiomodulation therapy garment of claim 1, wherein the garment is configured to wrap about or conform to a body part region, with the capability to be moved from one body part region to another body part region on the body.

3. The photobiomodulation therapy garment of claim 1 or 2, wherein the garment is sized and dimensioned to specifically fit a particular body part.

4. The photobiomodulation therapy garment of claim 3, wherein the particular body part is a head region, a neck region, a shoulder region, a torso region, a hand region, a wrist region, an arm region, a foot region, or a leg region, or any combination thereof.

5. The photobiomodulation therapy garment claim 4, wherein the garment is a headband, a hat, a visor, a shirt, a pants, a sock, a glove, or an undergarment.

6. The photobiomodulation therapy garment of any one of claims 1-5, wherein each of the one or more near-infrared light sources is a near-infrared light emitting diode or a near-infrared low-level laser.

7. The photobiomodulation therapy garment of any one of claims 1-6, wherein each of the one or more sensors is configured to detect and collect information on one or more parameters of the garment, the photobiomodulation unit and components therein, the controller and components therein, and the user, and thereafter transmit the information to the controller.

8. The photobiomodulation therapy garment of claim 7, wherein the one or more parameters includes operational information of the garment, the photobiomodulation unit and components therein, and the controller and components therein, biometric information on the user, or any combination thereof.

9. The photobiomodulation therapy garment of any one of claims 1-8, wherein the executable instructions independently control each of the one or more near-infrared light sources.

10. The photobiomodulation therapy garment of claim 9, wherein the executable instructions control activation, duration of activation, deactivation, duration of deactivation, a pattern and timing of activation, a pattern and timing of deactivation, a fluence level, an irradiance level, a

dosimetry level, a pulsed operation, a continuous operation, an operation time, a cycle duration, or any combination thereof for each of the one or more near-infrared light sources.

11. The photobiomodulation therapy garment of any one of claims 1-10, wherein the executable instructions independently control each of the one or more sensors.

12. The photobiomodulation therapy garment of claim 11, wherein the executable instructions control collection and analysis of information obtained from each of the one or more sensors.

13. The photobiomodulation therapy garment of any one of claims 1-12, wherein the one or more near-infrared light sources are a plurality of spaced apart near-infrared light sources.

14. The photobiomodulation therapy garment of claim 13, wherein the plurality of near-infrared light sources are arranged in a plurality of spaced apart near-infrared light source groups, each of the plurality of near-infrared light source groups comprising a subset of the one or more near-infrared light sources.

15. The photobiomodulation therapy garment of any one of claims 1-14 further comprising one or more stimulators.

16. The photobiomodulation therapy garment of claim 15, wherein the one or more stimulators include a component that can generate a magnetic field.

17. The photobiomodulation therapy garment of any one of claims 1-16, wherein the processor and the memory are configured with executable instructions for dynamically controlling each of the one or more near-infrared light sources and each of the one or more sensors.

18. The photobiomodulation therapy garment of any one of claims 1-17, wherein the skin surface comprises a forehead site, a posterior cervical site, a carpal site, an abdominal site, or any combination thereof.

19. The photobiomodulation therapy garment of claim 18, wherein the forehead site comprises a dorsolateral prefrontal cortex region, a frontal eye fields region, or both.

20. The photobiomodulation therapy garment of claim 18, wherein the forehead site comprises an Fp1 site, an Fpz site, an Fp2 site, an F3 site, an Fz site, an F4 site, or any combination thereof.

21. The photobiomodulation therapy garment of any one of claims 1-20, wherein each of the one or more near-infrared light sources is configured to emit near-infrared light having a wavelength of between 700 nm to 1200 nm.

22. The photobiomodulation therapy garment of claim 21, wherein each of the one or more near-infrared light sources is configured to emit near-infrared light having a wavelength of between 800 nm to 1100 nm.

23. The photobiomodulation therapy garment of any one of claims 1-22, wherein each of the one or more near-infrared light sources is configured to emit an irradiance of at least 50 mW/cm^2.

24. The photobiomodulation therapy garment of Claim 23, wherein each of the one or more near-infrared light sources is configured to emit an irradiance of between 100 mW/cm^2 to 400 mW/cm^2.

25. The photobiomodulation therapy garment of any one of claims 1-24, wherein the one or more near-infrared light sources are configured to emit a radiant flux of at least 900 mW.

26. The photobiomodulation therapy garment of any one of claims 1-20, wherein each of the one or more near-infrared light sources is a near-infrared low-level laser that emits near-infrared light having a wavelength of between 700 nm to 1200 nm and having an irradiance of at least 50 mW/cm^2, wherein the one or more near-infrared light sources are configured to emit a radiant flux of at least 900 mW.

27. The photobiomodulation therapy garment of any one of claims 1-20, wherein each of the one or more near-infrared light sources is a near-infrared low-level laser that emits near-infrared light having a wavelength of between 800 nm to 1100 nm and having an irradiance of between 100 mW/cm^2 to 400 mW/cm^2, wherein the one or more near-infrared light sources are configured to emit a radiant flux of at least 900 mW.

28. A photobiomodulation therapy garment of any one of claims 1-27 for use in providing a photobiomodulation therapy.

29. The photobiomodulation therapy garment of claim 28, wherein the photobiomodulation therapy is a transcranial photobiomoculation therapy.

30. The photobiomodulation therapy garment of claim 28 or 29, wherein the photobiomodulation therapy garment is the sole therapeutic device or used in conjunction with a second therapy.

31. The photobiomodulation therapy garment of claim 30, wherein the second therapy includes a high-power irradiance photobiomodulation therapy, a cognitive behavioral therapy, a transcranial magnetic stimulation, an ocular light therapy, an evidence-based mental health practice, a mindfulness therapy, or a meditative therapy.

32. The photobiomodulation therapy garment any one of claims 28-31, wherein administration of the photobiomodulation therapy is based on a circadian rhythm of an individual.

33. The photobiomodulation therapy garment any one of claims 28-32, wherein administration of the photobiomodulation therapy increases cellular energy production, increases neuronal mitochondria energy, increases adenosine triphosphate (ATP) production, increases reactive oxygen species production, reduces cellular and tissue-level inflammation, improves cellular repair and healing, increases nitric oxide production, increases cerebral blood flow, increases neurogenesis, increases neuronal plasticity, increases neuroprotection, enhances neural repair, reduces inflammation, or any combination thereof.

34. The photobiomodulation therapy garment of any one of claims 28-33, wherein use of the photobiomodulation therapy garment delivers a radiant energy of at least 500 J during the therapy.

35. The photobiomodulation therapy garment of claim 34, wherein the radiant energy is at least 1100 J.

36. The photobiomodulation therapy garment of any one of claims 28-35, wherein use of the photobiomodulation therapy garment delivers a radiant exposure of at least 30 J/cm^2 to at most 200 J/cm^2 during the therapy.

37. The photobiomodulation therapy garment of any one of claims 28-36, wherein use of the photobiomodulation therapy garment delivers a radiant intensity of at least 30 mW/sr to at most 400 mW/sr.