Claims

What is claimed is:

1. A wearable device, comprising:

a headgear;

an inline system including:

two end mounting brackets;

an air inlet filter coupled with one of the end mounting brackets; and

two or more connecting pipes comprising UVC light sources, wherein two of the two or more connecting pipes are coupled with the two end mounting brackets, and wherein the connecting pipes are configured to receive air from the air inlet filter and to sterilize the air using UVC light from the UVC light sources; and

an air hose coupling the inline system to the headgear and configured to transport a flow of sterilized air from the inline system to the headgear;

wherein:

the flow of sterilized air provides an air curtain inside the headgear, flowing from a top of the headgear to a bottom of the headgear, and exiting the headgear at the bottom.

2. The wearable device of claim 15, further comprising:

a u-shaped backpack coupling two of the two or more connecting pipes and passing the flow of sterilized air from a first of the two connecting pipes to a second of the two connecting pipes, wherein the u-shaped backpack comprises a fan.

3. The wearable device of claim 16, wherein the u-shaped backpack comprises a bracket to hold one of the UVC light sources.

4. The wearable device of claim 15, further comprising:

two connecting mounting brackets and a bridging bracket, wherein:

each of the two connecting mounting brackets couples with one of the connecting pipes;

the bridging bracket mechanically couples the two connecting mounting brackets to pass the flow of sterilized air from a first of the connecting pipes to a second of the connecting pipes; and

at least one of the two connecting mounting brackets comprises a fan.

5. The wearable device of claim 18, wherein:

at least one of the two connecting mounting brackets comprises a bracket to hold one of the UVC light sources.

6. The wearable device of claim 18, wherein the bridging bracket is divided in two parts, one part on each of the two connecting mounting brackets.

7. The wearable device of claim 15, wherein one of the two end mounting brackets comprises a bracket to hold one of the UVC light sources.

8. The wearable device of claim 15, wherein the headgear comprises a helmet.

9. The wearable device of claim 15, wherein the headgear comprises a full face mask comprising a sterilized air intake coupled with the air hose, and an air exhaust.

10. The wearable device of claim 15, wherein an inside surface of one of the two or more connecting pipes is lined with reflective material.

11. The wearable device of claim 15, further comprising:

a power and electronics pack, including a battery and control electronics to regulate the flow of sterilized air; and

a portable display configured to show system information including a battery status.

12. The wearable device of claim 25, wherein the power and electronics pack includes a ballast for one of the UVC light sources.

13. The wearable device of claim 15, wherein the inline system includes two belt holders snapped to the two or more connecting pipes and wherein each of the two belt holders has a belt

14. The wearable device of claim 15, wherein the UVC light sources can be exchanged to optimize a UVC spectrum for any combination of biological contaminants.