

CLAIMS

1. A system for identifying peripheral veins, said system comprising:
at least two illuminating units, each illuminating unit comprising:
a housing, said housing adapted to be placed onto a finger of a user, wherein said housing has a shape and size, which conform to the shape and size of a human finger, to enable maneuverability of each illuminating unit in three-dimensional space;
at least one illumination source, said at least one illumination source configured to illuminate light at a wavelength selected from the entire visible light spectrum for highlighting visibility of peripheral veins which are otherwise invisible to a naked eye, wherein each of the at least one illumination source is covered by a high refractive index material providing a barrier between the at least one illumination source and a skin of the user; and
an intensity control unit configured to control the intensity of said at least one illumination source.
2. The system of claim 1, wherein the at least one illumination source is configured to illuminate light at a wavelength selected from the red spectrum.
3. The system of claim 1, wherein the at least one illumination source is configured to illuminate light at a wavelength between 610 nm and 760 nm.
4. The system of any one of claims 1 to 3, wherein each illuminating unit comprises a camera for acquiring images of the highlighted veins and a transmitter for transmitting said images to a display unit.
5. The system of claim 4, wherein said system further comprises a display unit for displaying the highlighted veins to a user.
6. The system of claim 4, wherein said transmitter is a wireless transmitter.

7. The system of any one of claims 1 to 6, wherein each illuminating unit is adapted to be placed onto a different finger of a user.
8. The system of any one of claims 1 to 7, wherein said system further comprises a color control unit configured to control the wavelength at which said at least one illumination source illuminates.
9. The system of any one of claims 1 to 8, wherein each illuminating unit is connected to an external device, said external device comprising a power source.
10. The system of any one of claims 1 to 8, wherein each illuminating unit comprises an internal power source within said housing.
11. The system of any one of claims 1 to 10, wherein each illuminating unit comprises at least one illumination source at a top end of said each illuminating unit.
12. The system of any one of claims 1 to 10, wherein each illuminating unit comprises more than one illumination source on a side of the housing of each illuminating unit.
13. The system of claim 12, wherein each illumination source emits light at a different wavelength.
14. The system of any one of claims 1 to 13, wherein said at least two illuminating units are connected to an external light source via a fiber optic connection.
15. The system of any one of claims 1 to 13, wherein said at least two illuminating units are connected via an electrical connection.
16. The system of any one of claims 1 to 15, wherein said housing is made of a flexible material.

17. The system of any one of claims 1 to 16, wherein one of said at least two illuminating units is configured to be placed onto a thumb of a user and another unit of said at least two illuminating units is configured to be placed onto an index finger of the user.

18. A method for identifying peripheral veins, said method comprising:
providing at least two illuminating units, each illuminating unit comprising:
a housing, said housing adapted to be placed onto a finger of a user;
at least one illumination source, said illumination source configured to illuminate light at a wavelength selected from the entire visible light spectrum for highlighting visibility of peripheral veins which are otherwise invisible to a naked eye, wherein each of the at least one illumination source is covered by a high refractive index material providing a barrier between the at least one illumination source and a skin of the user;
an intensity control unit configured to control the intensity of said at least one illumination source;
maneuvering said at least two illuminating units in three-dimensional space such to control: an angle of illumination towards a skin of a patient, a distance between said at least two illuminating units, and a pressure applied onto the skin of the patient via said at least two illuminating units;
and
identifying peripheral veins within or under the skin of the patient.

19. The method of claim 18, further comprising compressing a vein by applying pressure via said at least two illuminating units onto a skin of a patient, to differentiate between a valve and a thrombus, and between a patent vein and a thrombus.

20. The method of claim 18, further comprising anchoring a vein in a stable position by applying pressure via said at least two illuminating units onto a skin of a patient.

21. The method of any one of claims 18 to 20, further comprising increasing amount of light directed into a skin of a patient for increasing visibility of a vein within or under the skin, by applying pressure via said at least two illuminating units onto a skin of a patient.
22. The method of any one of claims 18 to 21, wherein said illumination source is configured to illuminate light at a wavelength selected from the red spectrum.
23. The method of any one of claims 18 to 22, wherein said illumination source is configured to illuminate light at a wavelength selected between 610 nm and 760 nm.
24. The method of any one of claims 18 to 23, wherein said angle of illumination towards the skin of the patient is between 30 to 45 degrees with respect to the at least one illumination source.
25. A system for identifying peripheral veins, said system comprising:
at least two illuminating units, each illuminating unit comprising:
a housing, said housing adapted to be placed onto a finger of a user, wherein said housing has a shape and size, which conform to the shape and size of a human finger, to enable maneuverability of each illuminating unit in three-dimensional space;
at least one illumination source, said at least one illumination source configured to emit light at a wavelength selected from the entire visible light spectrum for highlighting visibility of peripheral veins which are otherwise invisible to a naked eye, wherein an angle of illumination towards a skin of the user is between 30 to 45 degrees with respect to the at least one illumination source; and
an intensity control unit configured to control the intensity of said at least one illumination source.