11. The finger vein sensor of claim 10, further comprising a transparent finger resting surface such that the finger is rested on the transparent finger resting surface.

12. The finger vein sensor of claim 11, further comprising a finger vein sensor enclosure having a lower compartment for positioning the infrared light source and an upper compartment for positioning the image sensor and the lens.

13. The finger vein sensor of claim 12, wherein an upper surface of the lower compartment forms the transparent finger resting surface, and a lower surface of the upper compartment comprises a transparent surface.

14. A finger vein sensor comprising:

an image sensor for capturing at least one infrared image of finger vein pattern of a finger of a target human, wherein the image sensor is positioned on the top of the finger vein sensor facing the center of the finger vein sensor in a horizontal direction;

an infrared light source positioned at the bottom of the finger vein sensor; and

an optical reflector positioned between the image sensor and the infrared light source for reflecting the vertically oriented infrared image of finger vein pattern of the finger to the horizontally oriented image sensor,

wherein the finger is positioned between the infrared light source and the image sensor, the infrared light from the infrared light source irradiates the finger vertically from the bottom to generate the infrared image of finger vein pattern of the finger in a vertical direction, and the infrared image of finger vein pattern of the finger is reflected by the optical reflector and captured by the horizontally oriented image sensor.

15. The finger vein sensor of claim 14, wherein the infrared light source comprises a plurality of infrared light-emitting diodes (LED), a plurality of infrared light bulbs, and/or any other infrared light sources, wherein the plurality of infrared LED and the plurality of infrared light bulbs are arranged in one or more rows and one or more columns.