CLAIMS

1. A catheter device to visually identify a blood vessel, comprising:

a cannula comprising a distal tip and an elongated tubular shaft, the elongated tubular shaft comprising an inner lumen and a lateral opening; and

an optical fiber configured to emit light and disposed within the inner lumen of the cannula, wherein the optical fiber comprises a distal end, a proximal end, and one or more grooves, each of the one or more grooves extending from the distal end to a portion of the optical fiber aligned with the lateral opening, wherein each of the one or more grooves is configured to allow blood to flow between the distal tip and the lateral opening.

2. The device of claim 1, wherein the distal end of the optical fiber is disposed proximate the distal tip of the cannula.

3. The device of claim 1, wherein when an emitted light from the optical fiber contacts blood, the blood does not reflect the emitted light.

4. The device of claim 3, wherein the emitted light is reflected by tissue and/or skin.

5. The device of claim 1, wherein from the optical fiber does not include red light.

6. The device of claim 1, wherein from the optical fiber is red light having a light emission peak in wavelengths of 640 to 680 nanometers.

7. The device of claim 1, wherein the optical fiber is configured to move past the distal tip of the cannula to guide a catheter into the blood vessel.

8. The device of claim 7, wherein the distal end of the optical fiber is rounded.

9. The device of claim 1, wherein the optical fiber and the cannula are further configured in an interference fit.

10. The device of claim 9, wherein when from the optical fiber contacts blood, the blood does not reflect the emitted light.

11. The device of claim 10, wherein the emitted light does not include red light.

12. The device of claim 11, wherein the emitted light is reflected by tissue and/or skin.