

CLAIMS

1. A catheter device comprising:
 - 5 a needle comprising a needle tip and a wall;
 - a notch formed through the wall of the needle proximal of the needle tip;
 - a catheter hub with a catheter tube having the needle located therein;
 - a biocompatible seal disposed over the notch and located inside the catheter tube in a ready position.
- 10 2. The catheter device of claim 1, wherein a distal portion of the catheter tube forms a seal with the needle.
3. The catheter device of any of the preceding claims, further comprising a valve located in an interior cavity of the catheter hub.
4. The catheter device of claim 3, further comprising an activator located in the interior
15 cavity of the catheter hub proximal of the valve, wherein the activator is configured to press open the valve.
5. The catheter device of any of the preceding claims, further comprising a needle shield to capture and cover the needle tip when the needle is retracted proximally out the catheter hub and located in the interior cavity of the catheter hub.
- 20 6. The catheter device of any of claims 1 to 4, further comprising a needle shield to capture and cover the needle tip when the needle is retracted proximally out the catheter hub.
7. The catheter device of claim 6, wherein the needle shield is located in an interior cavity of the catheter hub.
8. The catheter device of claim 6, wherein the needle shield is located in an intermediate
25 hub proximal of the catheter hub.
9. The catheter device of claim 6, wherein the biocompatible seal engages and pull the needle shield out of the catheter hub.
10. The catheter device of any of the preceding claims, wherein the biocompatible seal is transparent and is visible through the catheter tube and is made with a magnifying effect, a
30 luminous effect, or both.

11. The catheter device of any of the preceding claims, wherein the biocompatible seal is made from polymer of a class of chromogenic polymers to highlight the presence of blood or fluid flowing through the needle.

12. A method of manufacturing catheter needle assembly comprising:

5 providing a needle hub with a needle comprising a needle tip, a wall defining a needle lumen, a notch formed through the wall of the needle; and

sealing the notch, at least in part, with a non-metallic biocompatible material having a thickness, the non-metallic biocompatible material being transparent or semi-transparent for viewing through the thickness.

10 13. The method of claim 12, further comprising inserting the needle through a catheter hub and a catheter tube and extending the needle tip distally of a distal end of the catheter tube.

14. The method of claim 13, further comprising placing a needle shield in line with the needle to cover the needle tip.

15 15. The method of claim 14, wherein the needle shield is supported by a valve opener located in the catheter hub.

16. The method of claim 14, wherein the needle shield is supported in a third hub located proximally of the catheter hub.

17. The method of claim 14, wherein the needle shield is spring loaded.

18. The method of claim 12, wherein the biocompatible material is bonded to the needle.

20 19. The method of claim 18, wherein the biocompatible material is formed by placing an insert inside the needle and spraying the biocompatible material over the notch.

20. A needle device comprising:

a needle hub;

25 a needle extending from the needle hub and comprising a needle tip, a wall defining a needle lumen, and a notch formed through the wall of the needle at a proximal location of the needle tip; and

a biocompatible material disposed over the notch, wherein blood flowing through the needle is visible through the biocompatible material.

30 21. The needle device of claim 20, wherein the biocompatible material engages a needle shield to remove the needle shield from an interior cavity of a catheter hub.