

CLAIMS

What is claimed is:

1. A medical device, comprising:
a catheter adapter;
a cannula forming a lumen having a length between a first end and an opposing second end of the cannula, the lumen extending parallel to a longitudinal axis of the cannula and extending along at least a portion of the length, the cannula comprising at least one echogenic stripe extending along at least a portion of the length of the cannula.
2. The medical device of claim 1, wherein the at least one echogenic stripe comprises a plurality of voids formed in the at least one stripe.
3. The medical device of claim 1, wherein the at least one echogenic stripe comprises a plurality of irregularities formed in the at least one stripe.
4. The medical device of claim 1, wherein the at least one echogenic stripe has radiopaque properties.
5. The medical device of claim 1, wherein the cannula has a smooth outer surface and a smooth inner surface forming the lumen.
6. The medical device of claim 1, wherein at least one of an outer surface of the cannula and an inner surface of the cannula forming the lumen includes an intentionally regularly patterned surface.

7. A catheter having a distal end and an opposing proximal end, the catheter comprising:

a catheter adapter;

a cannula extending distally from the catheter adapter, the cannula forming a lumen extending between the distal end and the proximal end of the catheter parallel to a longitudinal axis of the catheter; and

one or more stripes formed in the cannula, the one or more stripes extending along at least a portion of a length of the cannula, the one or more stripes having echogenic properties or features.

8. The catheter of claim 7, wherein the one or more stripes include a plurality of voids 32 between an outer surface and an inner surface of the cannula.

9. The catheter of claim 7, wherein the one or more stripes include one or more irregularities to enhance the echogenic reflective properties of the one or more stripes.

10. The catheter of claim 7, wherein the one or more stripes includes a relatively dense material to create the echogenicity-enhancing properties of the one or more stripes.

11. The catheter of claim 7, wherein an outer surface of the cannula defining an outer diameter of the cannula and an opposing inner surface of the cannula defining an inner diameter of the cannula and forming the lumen comprise a smooth surface or an initially regularly patterned surface.

12. The catheter of claim 7, wherein the one or more stripes have radiopaque properties or features.

13. A method for forming a stripe in a cannula of a catheter, the method comprising extruding a thermoplastic polymer material through an array of dies aligned such that a stripe made of a first thermoplastic polymer material and having echogenic properties or features is

formed between and bonded to a second thermoplastic polymer material forming adjacent wall portions of a wall of the cannula.

14. The method of claim 13, further comprising infusing gas into the first thermoplastic polymer material used to form the stripe to form voids in the stripe.

15. The method of claim 13, further comprising adding a chemical foaming agent to the first thermoplastic polymer material used to form the stripe to form voids in the stripe.

16. The method of claim 13, further comprising adding ceramic beads or particles, metal beads or particles, and/or expandable thermoplastic blowing agents and/or lightweight fillers to the first thermoplastic polymer material used to form the stripe to form voids in the stripe.

17. The method of claim 13, wherein the stripe has radiopaque properties or features.