What is claimed is:

1. An inflow cannula assembly, for transporting blood between a heart chamber and a ventricular assist device (VAD), comprising:

a deformable polymeric cannula, wherein the cannula includes:

a first end, including a bellmouth intake configured to be inserted into the heart chamber;

a second end with a flange ramp; and

a conduit, wherein the first and second ends are integrally joined by the conduit, and an entire inner surface of the conduit is smooth and seamless;

a male fastener and a female fastener, wherein the male fastener and female fastener are screw interconnected with the male fastener anchored on the conduit;

a ventricular assist device (VAD) coupler; and

a ventricular assist device (VAD) inlet adapter, wherein:

the second end is configured to interface with the VAD inlet adapter;

the VAD coupler connects the second end with the VAD inlet adapter, and the VAD coupler includes a flange base and a pair of collars pinned on the flange base, wherein the collars have at least one internal grooved slot configured to receive and compress the flange base together with the flange ramp of the cannula, and a beak flange of the VAD inlet adapter; and

the VAD inlet adapter includes a beak configured to be interfaced with the second end, the beak flange configured to be received by the VAD coupler, and a base integrated with the VAD.

2. The inflow cannula assembly as claimed in claim 1, wherein the bellmouth has a gradually thinning wall thickness toward its tip, and the tip is sharp-edged.

3. The inflow cannula assembly as claimed in claim 1, wherein an overlay portion of the conduit in contact with cored myocardium is roughened to promote cell and tissue ingrowth for hemostasis and immobilization purposes.

4. The inflow cannula assembly as claimed in claim 1, wherein porous materials are attached to a cuff of the female fastener, and the cuff is in contact with an epicardium of the heart chamber, for promoting cell and tissue ingrowth for hemostasis and immobilization purposes.

5. The inflow cannula assembly as claimed in claim 4, wherein the cuff is supported by a Nitinol stent to generate spring load when locked on the epicardium, thereby maintaining the cuff in contact with the epicardium.

6. The inflow cannula assembly as claimed in claim 1, wherein the beak of the VAD inlet adapter is interfaced with the second end via the flange ramp, an inner diameter of the beak is slightly larger than an inner diameter of the conduit, and an interface surface of the flange ramp is inclined generally 30 to 60 degrees relative to a centerline of the cannula.

7. The inflow cannula assembly as claimed in claim 1, wherein the VAD coupler includes an anti-decoupling latch and a collar contour configured to simultaneously engage an entire peripheral rim of the flange base to provide a concentric coupling between the second end and the inlet adapter of the connected VAD.

8. The inflow cannula assembly as claimed in claim 1, further comprising a stent embedment disposed in the cannula wall.

9. The inflow cannula assembly as claimed in claim 8, wherein the stent is made of Nitinol material.

10. The inflow cannula assembly as claimed in claim 8, wherein the stent comprises a zig-zag ring structure and is disposed in regions corresponding to the bellmouth and the conduit.

11. The inflow cannula assembly as claimed in claim 8, wherein the stent includes:

a plurality of arrays of zig-zag rings disposed in the conduit, each array having a tubular shape; and

a cone-shaped array of zig-zag rings disposed in the bellmouth.