WHAT IS CLAIMED IS:

1. An implantable encapsulation device comprising:

a plurality of containment tubes interconnected by connection members, each said containment tube having a first access port at a first end thereof and a second access port at a second end thereof; and

resealable caps affixed to each said second access port to seal each said second end of said containment tubes,

wherein said containment tubes are substantially parallel to each other along a length of said device, and

a flush port fluidly connected to one or more of said containment tubes via a tube

wherein said containment tubes comprise a porous composite material including:

an outer polymeric layer that permits ingrowth of vascular tissue; and

an inner polymeric layer disposed adjacent to said outer porous polymeric layer, said inner polymeric layer being impervious to cellular or vascular ingrowth.

2. The device of claim 1, wherein said connection members are periodically spaced along a length of said containment tubes a distance from each other.

3. The device of claim 1, further comprising a removable manifold fluidly connected to said containment tubes at said first end.

4. The device of claim 3, wherein the manifold includes at least one connection port in fluid communication with a flush port and a tube.

5. The device of claim 1, wherein said plurality of containment tubes are connected by off-axis interconnection members.

6. The device of claim 1, further comprising a woven textile, a non-woven textile, or a knit.

7. The device of claim 1, wherein said containment tubes comprise a permeable membrane including an inner cell retentive layer and an outer vascularizing layer or said containment tubes comprise a shape memory material.

8. The device of claim 1, wherein each said containment tube comprises a lumen for the reception and containment of a biological moiety or therapeutic device therein.

9. The device of claim 8, wherein the therapeutic device comprises a drug delivery device, a gene therapy device, a cell encapsulation device and combinations thereof.

10. The device of claim 9, wherein the one or more therapeutic devices are removably sealed to a manifold fluidly connected to said containment tubes at said first ends.

11. The device of claim 10, wherein each of the one or more therapeutic devices includes a grasping structure.

12. The device of claim 9, wherein said biological moiety is a plurality of cells.

13. The device of claim 1, wherein said containment tubes have thereon a bio-absorbable material.

14. The device of claim 1, wherein said containment tubes are stacked upon one another in a z-direction.

15. The device of claim 1, wherein each of the plurality of containment tubes maintains a consistent cylindrical cross-section.

16. The device of claim 1, further comprising a bio-absorbable material in at least one of a solid form and a self-cohered web.

17. The device of claim 16, wherein the bio-absorbable material is formed at the first end or the second end as the solid form with a tapered leading edge.

18. The device of claim 1, wherein the containment tubes are independently movable from each other along a length of said device.