19. Title: Process for preparing vascular stents

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Key Words: Vascular stent, Solvent casting 3D printing technique

Domain: Healthcare

Summary: A method for preparing vascular stent by solvent casting (SC)-3D printing technique is developed. It involves forming a multifunctional microsystem having complex geometries. A rotating mandrel is used to fabricate the vascular stent with a customized design. The SC-3DP does not affect the physical/biological properties of the microsystem. The design of pore architecture can be controlled which allows better cell adhesion. Further, it allows to have drug coatings of the entire internal structure.

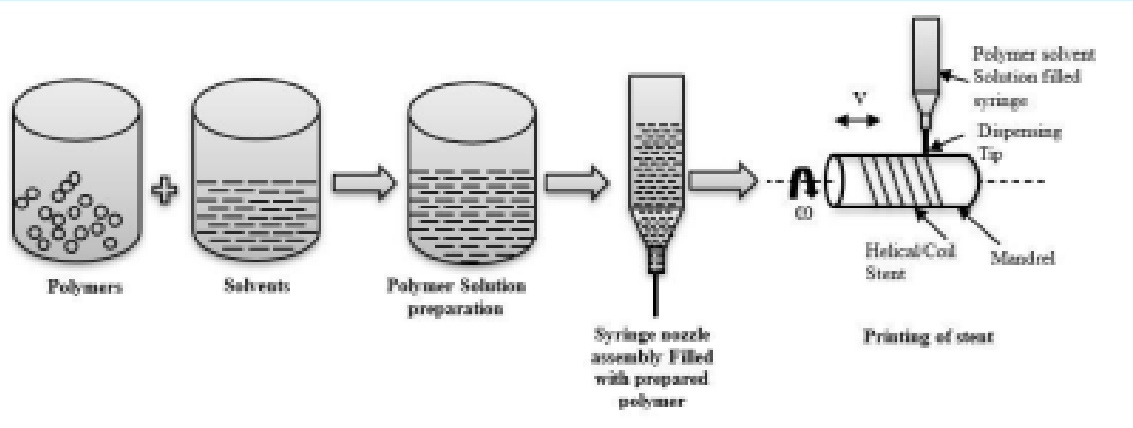

Diagram: schematic of process for preparing vascular stents

Advantages:

- Economic construction of complex shapes in SC-3DP
- Vascular stents possess homogeneous shape with varying density
- Excellent mechanical strength and optimum fluid flow
- Maximum strength and minimum weight/cost

Applications: Treatment of heart patients

Scale of Development: Optimized the technology of solvent casting 3D printing technique for preparing vascular stent and tested extensively in the laboratory

Technology Readiness Level: 4

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