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(54) **NANOFIBER SCAFFOLDS FOR BIOLOGICAL STRUCTURES**

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(57)

**ABSTRACT**

A system for manufacturing an artificial construct suitable for transplantation into a biological organism that includes a two or three three-dimensional preform that is based on the actual two or three-dimensional structure of a native mammalian tissue; and an electrospinning apparatus, wherein the electrospinning apparatus is operative to deposit at least one layer of polymer fibers on the preform to form a polymer scaffold, and wherein the orientation of the fibers in the scaffold relative to one another is substantially parallel.

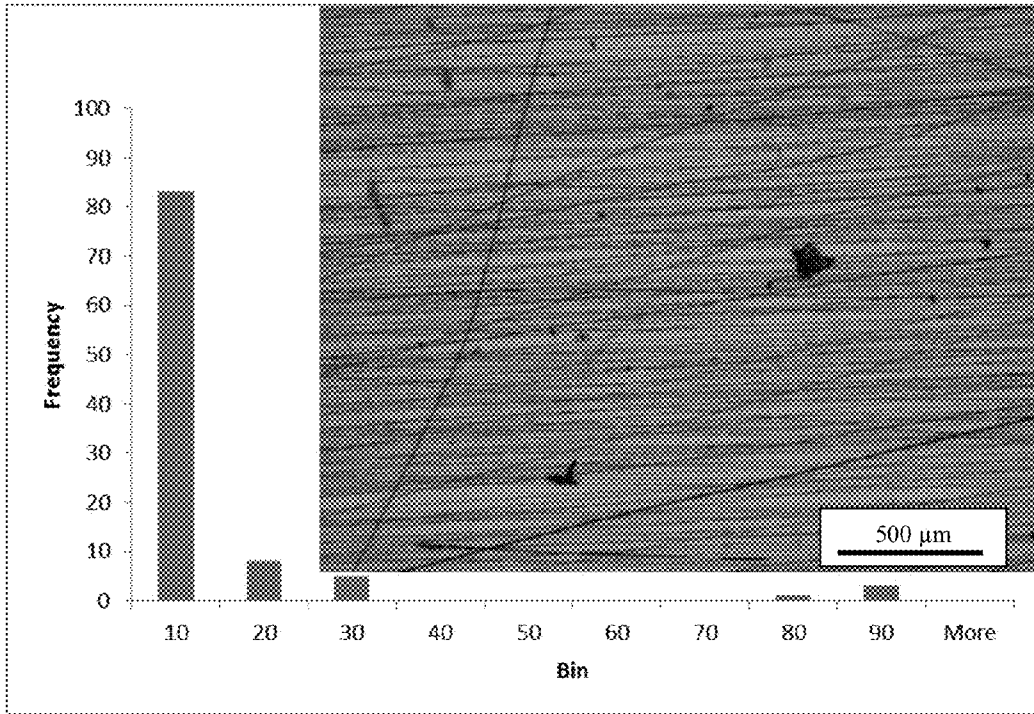


FIG. 1

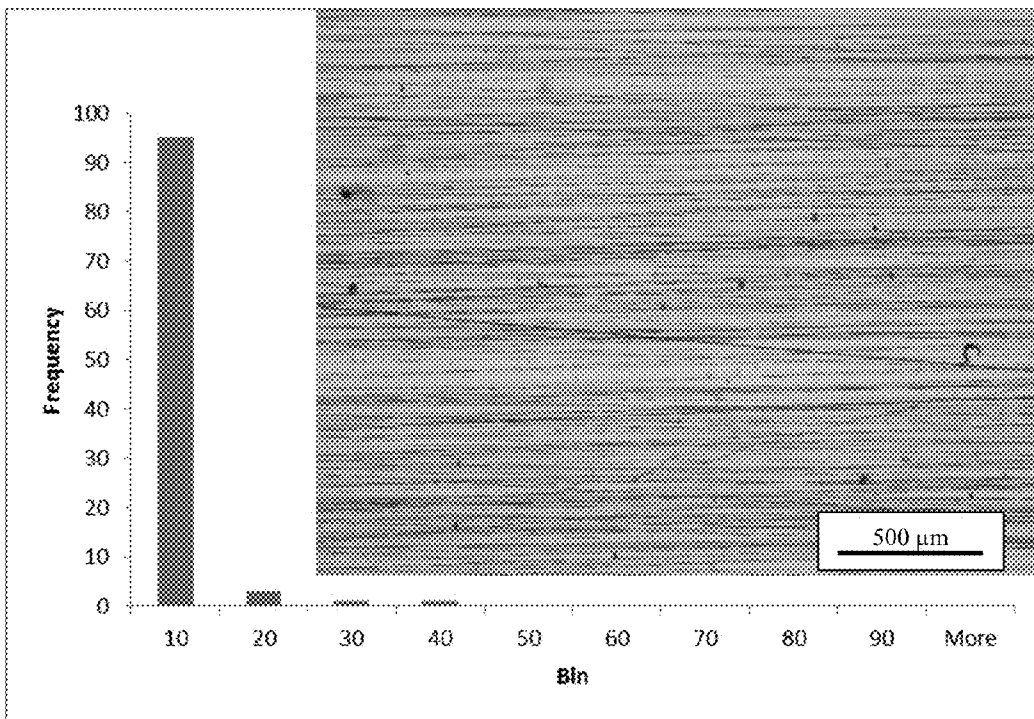


FIG. 2

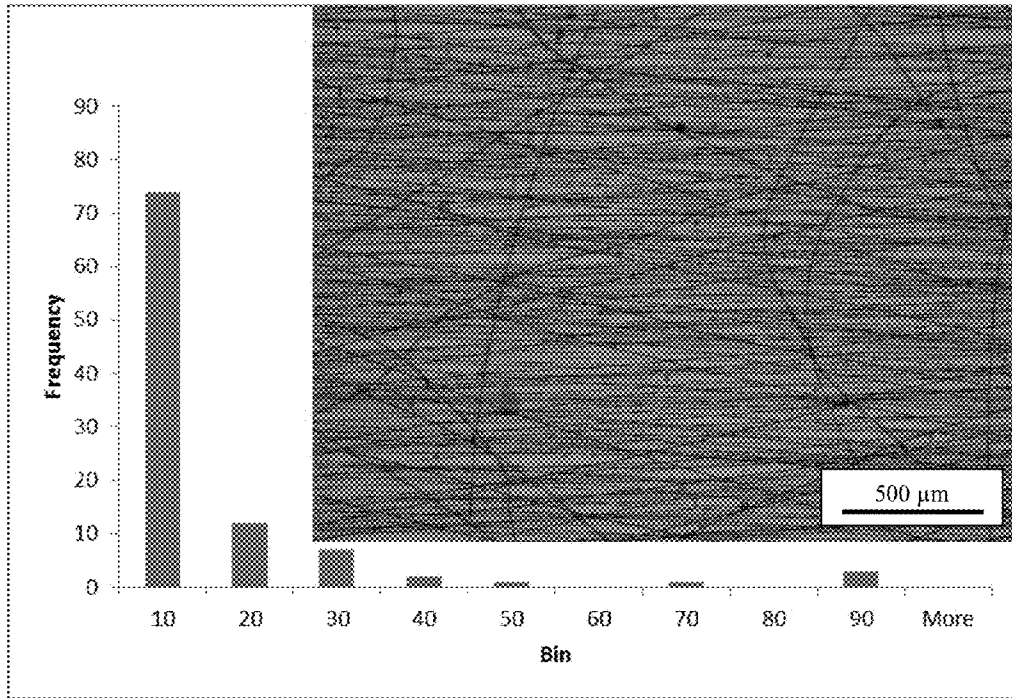


FIG.3

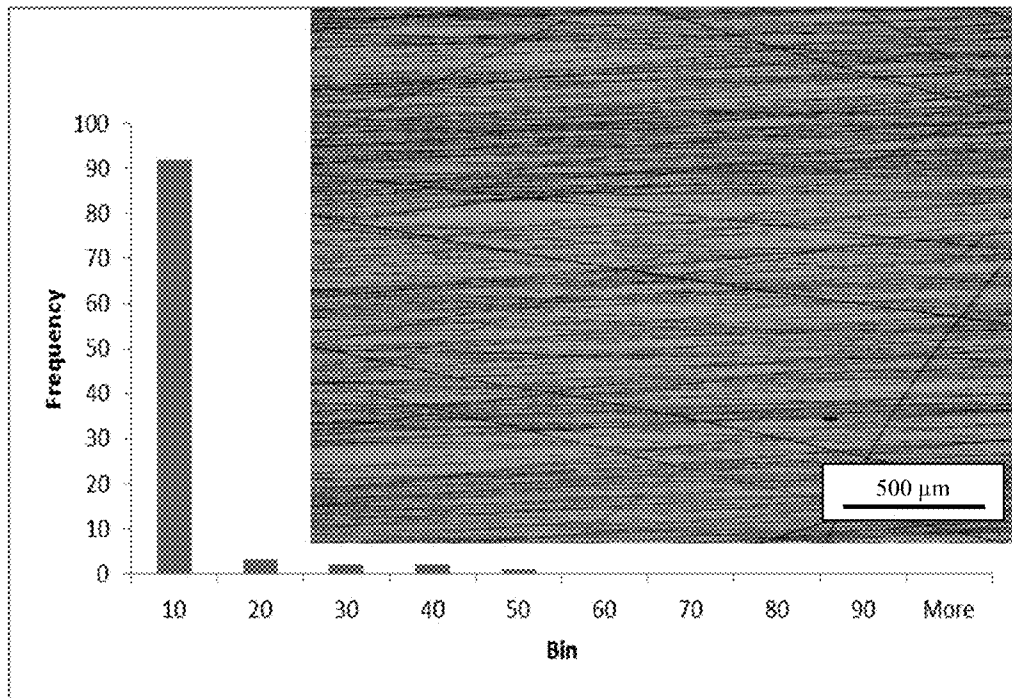


FIG.4



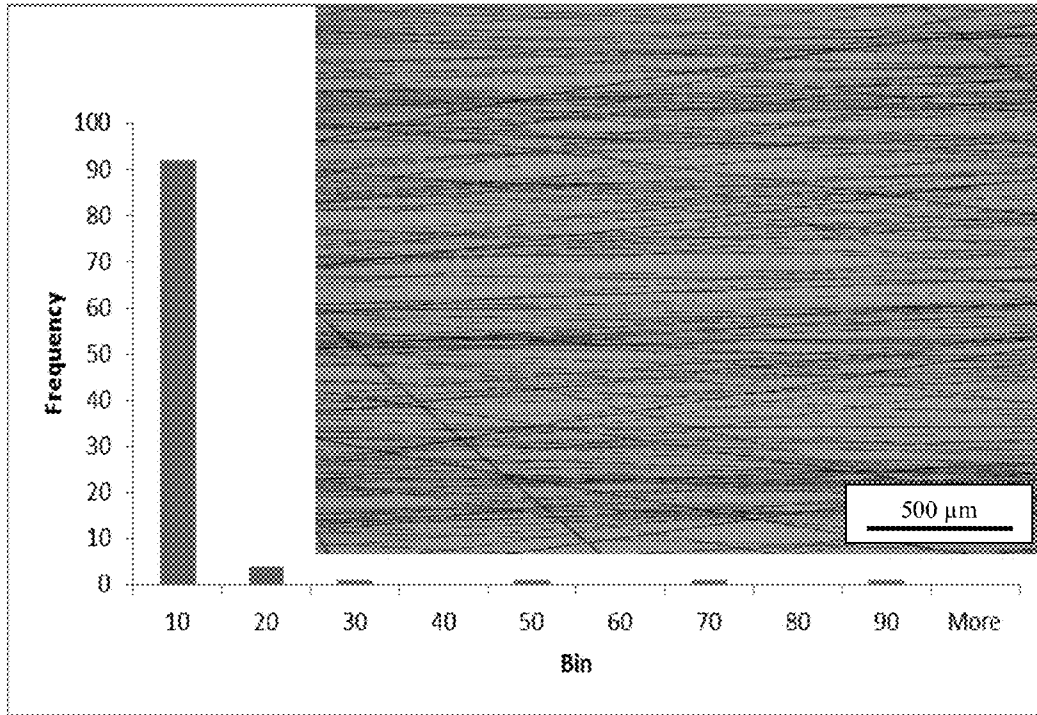


FIG. 5

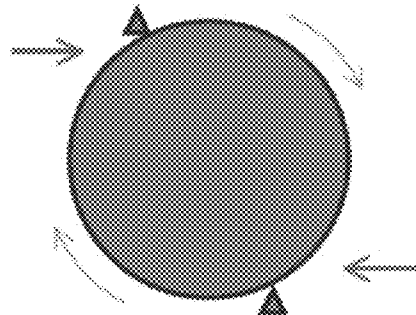


FIG. 6

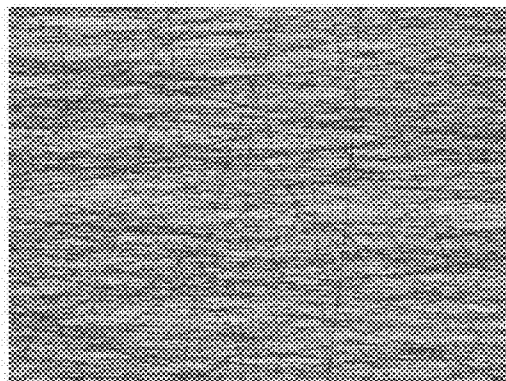


FIG. 7

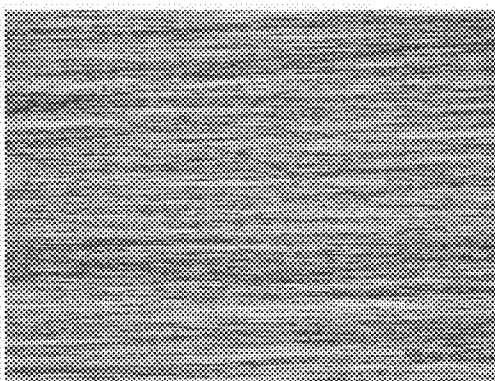


FIG. 8

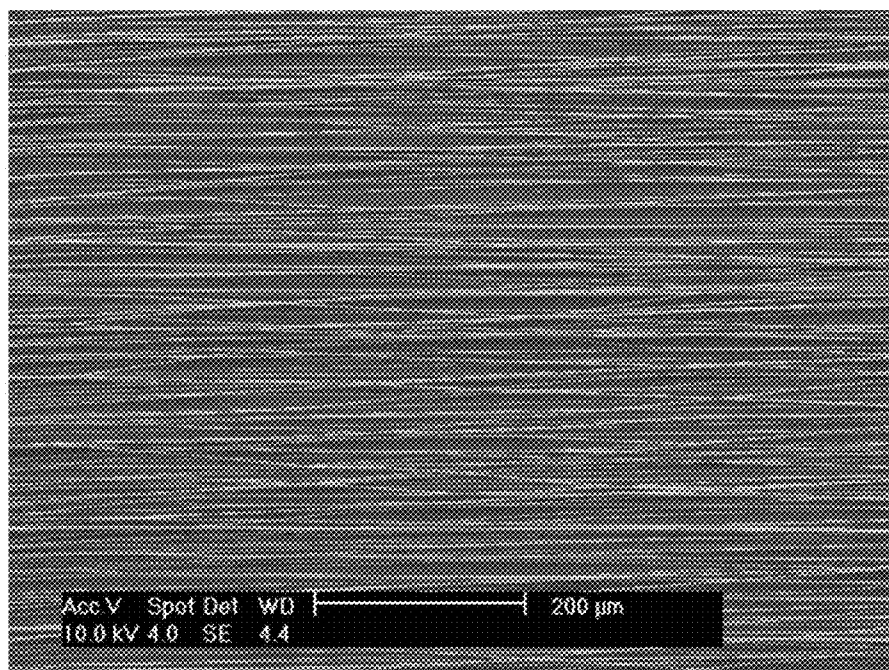


FIG. 9

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