Hydrogel Constructs Using Stereolithography

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Abstract: A preferred embodiment of the present invention provides a method and system for building cost-efficient biocompatible hydrogel constructs using stereolithography. Hydrogel constructs may be used in, for example, multi-lumen nerve regeneration conduits and other tissue engineering scaffolds with embedded channel architecture that facilitate tissue regeneration through possible incorporation of precisely located bioactive agents, cells, and other desired inert and/or active chemical agents and devices. Another preferred embodiment of the present invention provides a method of fabricating a hydrogel construct comprising: solidifying a first solution comprising; a first polymer; and a first photoinitiator, wherein the first polymer and first photoinitiator are of a first concentration.