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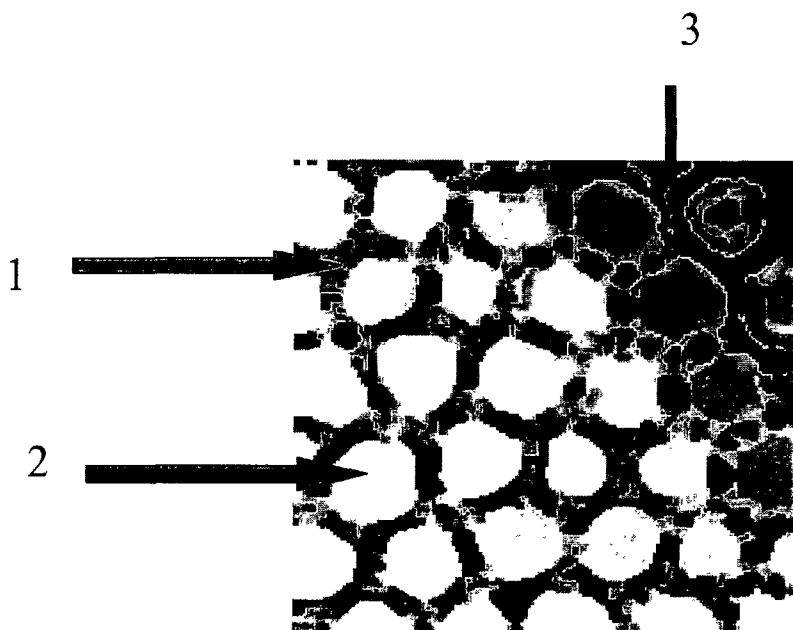
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(54) Title: BIOACTIVE MATERIALS, METHODS OF MAKING BIOACTIVE MATERIALS AND METHOD OF USE THEREOF



(57) Abstract: A bioactive material is made using fibroin solutions and suspensions that can be used alone or as a composite with particles such as core/shell particles. The material is designed to support the constructions, repair, regeneration or augmentation of bone and other tissues of the body. The solutions and suspensions can be loaded with core/shell-type particles comprising inorganic core materials that are coated with biodegradable polymers with an outer coating of a calcium phosphate precursor. The fibroin solutions, suspensions, and composites can be injected to fill cavities or to replace missing tissue. After injection, the materials can produce a scaffold capable of promoting tissue regeneration while degrading. The degradation of the particles, when present,

can generate additional porosity within the scaffold and release other compounds in a controlled manner to enhance growth and activation of the cells necessary for tissue repair. The ability to inject the fibroin solutions, suspensions and composites can reduce the need for many types of surgical procedures that are used to replace or repair bone and other tissues.



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